AUDIOMEDIA

PROFESSIONAL AUDIO IN PRODUCTION

TECH FOCUS

Studio Monitors

Loudness Conference Report

Sound For Wonderbook

Live At The Arches

Life Of Pi

"...We made a great mix in 7.1, but Atmos has taken it to a whole other level."

A NEWBAY MEDIA PUBLICATION

9 770960 747024 01

WORLDWIDE EDITION

ISSUE 266 • JANUARY 2013 • UK £3.80

Designed to Adapt

As a sound engineer, you need to have a reliable and precise monitor system that reproduces the source sound neutrally. You want an uncolored and undistorted sound with flat frequency response in all situations. A monitor that is capable of automatically adapting to acoustical environments and correcting for levels, delays and room calibration is an indispensable tool for a sound professional. A Smart Active Monitor (SAM) addresses all these demanding tasks. A SAM system can be controlled with digital networking, enabling you to build highly flexible computer controlled systems of monitors. The acoustical features of SAMs can be optimized with software calibration features for different working styles or client demands. SAM reflects the most advanced monitoring system features available in the audio industry.
www.genelec.com

GENELEC®

Contents

Audio Media | January 2013 | Issue 266

NEWS

Technology News 10
Focusrite sees Red in time for NAMM 2013, Cartec's 500 series enclosure Comperes nicely, and Lynx's AES50 makes snaking easy for Midas.

Recording News 14
Valencia opens a new Berklee sound campus, and the new shortlist for this year's MPG awards is announced.

Broadcast News 16
KVIE makes a Solid move when it comes to updating its Californian control room, while Pinewood adds an Artemis to the mix.

Post News 17
Scrub gets lucky with a Catty production co., Atmos expands its count to 16 cinemas worldwide, and Hackenbacker goes the whole hog for a stinky production.

SR News 18
DiGiCo mixes both halls at the new Stavanger concert hall, and Duran acts as the AXYS for a live production of *Goodnight Mister Tom*.

Games Sound 24
JOHN BROOMHALL gets the inside track on the 49th AES International Conference on Audio for Games.

What's Up UK 26
As BBC Radio celebrates 90 years, KEVIN HILTON wonders what the next 90 years of aural broadcasting will hold?

GeoFocus: France 28
JIM EVANS finds out what's so special about Les Studios La Fabrique in Remy de Provence, where the Mix With The Masters programme is about to unfold.

TECHNOLOGY

Tech Focus: Monitors 42
AUDIO MEDIA presents a hot-pick of the very best monitors out there, to help you hear the ins and outs – and rights and wrongs – of your studio work.

Allen & Heath XB10 48
A mixer that packs in loads of broadcast friendly features in a small footprint at a very attractive price, makes the XB10 a potential 'great', argues ALISTAIR McGHEE.

Bettermaker EQ 50
It's the sound that really sells the Bettermaker EQ to NIGEL PALMER – and at the end of it all, isn't that what really counts?

Magix Sequoia 12 51
A heavyweight DAW with a whole department store's worth of bells and whistles, says ALISTAIR McGHEE of the latest version of Sequoia.

Olympus LS-14 52
JERRY IBBOTSON's a die-hard fan of Olympus recorders, and the latest in the company's range doesn't disappoint either.

Crown XTi 2 53
A torture session in the Arizona heat proves that Crown's amp series is more than up to the toughest challenge, finds WILL JAMES.

FEATURES

Final Cut: Life of Pi 30
PAUL MAC chats to the sound team behind this winter's magical blockbuster to find out how the use of Atmos added a special element of drama and impact to the mix.

The Arches 32
If you want to go underground in Glasgow, you can ride the famous 'Clockwork Orange' subway system. Or, you can head to a unique space underneath the railway station where eclectic and exciting events have been going on for 21 years beneath the city's feet. JO FLETCHER-CROSS heads deeper underground...

Loudness Summit Report 36
MIKE AITON reports on the Loudness Summit – a day's conference designed to analyse and discuss loudness implementation.

Sony Wonderbook 40
As Book of Spells becomes the first game to be launched on Sony's new Wonderbook, JOHN BROOMHALL finds out about the tasks behind the scenes to get it all sounding just right.

Video Guide 54
Workflow is all well and good – but how do you keep track of it all? KEVIN HILTON looks at media asset management tools to help you keep on top of everything.

Classic Cut: Back to the Future 58
It's stood the test of time – but why? KEVIN HILTON finds out what makes Back to the Future so timeless.

What will be our VCR Timer? The inability to program the timer function on a domestic VCR machine became an icon for the inability of the older generation to grasp new technologies. So I'm wondering what it will be that does it for me... for us. For anybody? What will we be able to legitimately call both new, and fangled.

Or is the VCR Timer phenomenon a myth? I mean, my parents could program the VCR, and while complaining of their own techno-phobia, still manage their lives with computers. Not fluently, I grant you – these days we have the advantage of a good grounding in digital fundamentals; core principals always inform an overview. Lack of fluency doesn't mean ineptitude or ignorance – though it might mean 'falling behind'; and that might be what the VCR Timer analogy really means.

Strangely, a psuedo techophobia can be a kind of passport to higher ground. The common notion that if you've worked through the razor-blade era then cutting on a workstation is an inferior art. A ten year apprenticeship in tea making doesn't make you right, and a critic's eye never sees the whole picture, because the nose gets in the way.

Experience is valuable, but if you think about it, if every new generation had to spend as much time as the previous generation learning a craft, then no progress would be made. We'd just be repeating the process over and over. That's not necessarily a bad thing in crafts where there is no alternative, but in this industry technology is in charge of the accelerator pedal and creativity holds on for dear life with that mad wind-tunnel face.

I'm pleased to say I haven't met my VCR Timer, but I'm not scared of it. It would be a horrible, selfish world if subsequent generations couldn't take ownership of the new.

By all means, use the old to inform you, but please avoid using it as a weapon. While it all still makes perfect sense, celebrate the new for bringing opportunity. When eventually it stops making sense, celebrate that too... And make sure you do it while you can still remember what you went upstairs for.

Happy New year.

Paul Mac, *Editor*

TECHNOLOGY
Bettermaker EQ 50

TECHNOLOGY
Olympus LS-14 52

FEATURE
The Arches 32

AUDIOMEDIA

www.audiomedia.com

AUDIO MEDIA (Europe), Suite L16, South Fens Business Centre,
Fenton Way, Chatteris, Cambs, PE16 6TT
Telephone: +44 (0) 1354 669960 – Facsimile: +44 (0) 1354 669965
General E-mail: mail@audiomedia.com – Press Release E-mail: pr@audiomedia.com

Managing Director/Circulation
Angela Brown
a.brown@audiomedia.com

Group Publisher Europe
Raffaela Calabrese
r.calabrese@broadcast.it

Editor In Chief
Paul Mac
p.mac@audiomedia.com
Tel: +44 (0) 1223 911380

News/AMSR Editor
Jo Fletcher-Cross
jfcross@audiomedia.com
Tel: +44 (0)1223 911133

Production Editor
Lanna Marshall
l.marshall@audiomedia.com
Tel: +44 (0) 1223 911639

Design & Production Manager
John-Paul Shirreffs
jp.shirreffs@audiomedia.com
Tel: +44 (0) 1223 911415

European Sales Director
Graham Kirk
g.kirk@audiomedia.com
Tel: +44 (0)1223 911224

European Sales Executive
Lenette Howard
lhoward@nbmedia.com
Tel: +44 (0) 1223 911153

US Sales West Coast
Janis Crowley
jcrowley@nbmedia.com

US Sales East Coast
Paul Leifer
pleifer@media-sales.net

Subscriptions
subs@audiomedia.com
UK £43
European (airmail) £60
International (airmail) £72
Payable in Sterling through UK bank

NewBay Media
www.nbmedia.com

The contents of this publication are subject to worldwide copyright protection and reproduction in whole or in part, whether mechanical or electronic, is expressly forbidden without the prior written consent of the Publishers. Great care is taken to ensure accuracy in the preparation of this publication but neither IMAS Publishing (UK) Limited nor the Editor can be held responsible for its contents. The views expressed are those of the contributors and not necessarily those of the Publishers or Editor. The Publishers accept no responsibility for the return of unsolicited manuscripts, photographs, or artwork.

© 2013 IMAS Publishing (UK) Limited. All rights reserved.
*Within Broadcast & Production

Advertisers Index

AES Games Conference	39	PMC	15
Audio Technica	22	PreSonus	5
DPA	13	Prism Sound	45
Dynaudio	35	Radial	59
Focusrite	34	Richmond	55
Genelec	2	Riedel	6
IPS	26	Schoeps	41
KMR	33	SCV	19
Midas	60	Sennheiser	45
MPG Awards	23	Sonnox	20
NAB	8-9	Studio Spares	21
Nova	37	Yamaha	27

Buy a PreSonus™ StudioLive™ and get the only compact digital mixer that can do all this and more.

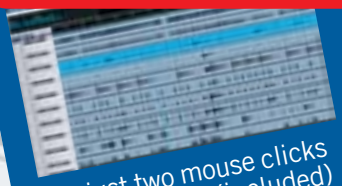
iPhone® monitor mix control

with **QMix**™ (free download)

iPad® mix control

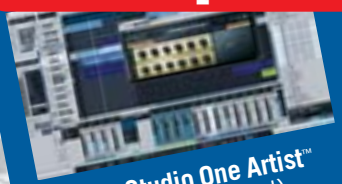
with **SL Remote**™ (free down-load)

Record multitrack



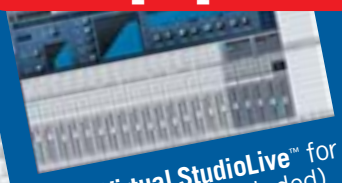
in just two mouse clicks with **Capture**™ (included)

Edit and produce



with **Studio One Artist**™ DAW (included)

Full laptop control



with **Virtual StudioLive**™ for Mac and PC (included)

Optimize system EQ

with Rational Acoustics' **Smaart**™ **Spectra** & **RTA** (included)

StudioLive™ 24.4.2, 25 XMAX™ preamps, 10 wireless monitor mixes with free QMix™ app.

Without a sweet suite of seamlessly integrated software, a digital mixer is just a mixer. And that's what makes StudioLive different from its competition. Our posse of perspicacious programmers have created the tools to do multi-track recording, control by laptop or multiple i-devices, serious production and even squeezed in a hunk of the world's most powerful acoustic analysis software.

Bottom line: PreSonus is the only digital mixer manufacturer that offers this level of software features — all without buying extra programs or hardware. Which is one reason StudioLive is the world's best-selling compact digital mixer series.

Visit our site, check out the hundreds of bayou-grown videos we made for YouTube and Vimeo. And then visit your nearest PreSonus dealer.

PreSonus®

www.presonus.com

©2012PreSonus Audio Electronics, Inc. all rights reserved. StudioLive, Capture and QMix are trademarks of PreSonus Audio Electronics, Inc. Studio One is a trademark of PreSonus Software Ltd. Smaart is a trademark of Rational Acoustics. Mac, iPad and iPhone are registered trademarks of Apple, Inc. Let's get this settled: "Hi/bi/ly Han/dri/shing" is NOT filmed in Louisiana!

See us at
NAMM Stand 6298 | **ISE** Stand 9-A111

RIEDEL

RockNet

Performance Audio Networks

- Intuitive Set-up: No Ethernet, no IP.
- Easy front panel operation
- 160 channels
- Up to 99 devices in one network
- CAT-5 redundant network interface
- Independent Gain
- 48kHz or 96kHz sample rate
- Remote Control

www.riedel.net

NEW

SOUNDCRAFT Si
INTEGRATION

SSL CONSOLE
INTEGRATION

NEW

On Twitter last month, we asked:

"Does games audio qualify as art?"

Some of you thought so...

@jonnieriordan:
Audio in video games can be just as manipulative and emotive, if not more than a film, as you're so involved – totally art!

@aliaspete:
Well, Guiles' theme from @StreetFighter goes with anything!!! Look it up on YouTube #guilesthemegoeswithanything #thatsART

@pennyverain:
Barbican thinks game audio is art: Final Fantasy concert – http://www.barbican.org.uk/music/event-detail.asp?ID=14201

This month:

http://news.bbc.co.uk/1/hi/programmes/click_online/9770565.stm
Cheaper, more accessible 3D printing technology sounds like a magical idea from the future, but some audio firms are already beginning to use the process. This video shows how the creative industries are embracing the technique. How do you think it will affect the audio industry? Join in the debate @AudioMediaMag

Subscriber Prize Draw Winner
Congratulations to to Craig Robertson from St Albans, who is this month's lucky winner of the AM subscriber's draw. Every month throughout 2013, one randomly selected subscriber will win an sE 4400a microphone. To be entered into the draw, you must have a current digital or print subscription. To get one, go online to the address below. Good luck!
www.audiomedia.com/subscribe.html

If you haven't visited our shiny new website yet, come and have a look right now – there's up-to-date industry news, features, and blogs, all ready and waiting to entertain and inform you. Our comprehensive events guide will make sure you don't end up in Tokyo when you could be networking in San Francisco, and when it's time to buy new equipment, you can download our incredibly useful International Buyer's Guides. If you've missed any issues of the magazine or there's an article or review you'd like to revisit, you can access back editions of *Audio Media* there too.

The 2013 International Console Guide is out now, available as a PDF download from our website, or as a digital edition for our digital subscribers. This is the biggest ever console guide featuring articles from 17 of the leading console manufacturers with independent stories and a comprehensive manufacturer directory.
www.audiomedia.com/buyers-guide

Sound Designer and Composer Mick Gordon has posted a song on his website made entirely from vocal recordings recorded by willing volunteers at the Game Developer's Conference in San Francisco. Every single sound is a noise made by somebody's mouth at GDC, and then manipulated using various sound design techniques. Not a single other sample, synth, instrument, or recording was used in the track. He also blows his chance of being invited to join the Magic Circle by going on to explain how he did it.
http://mick-gordon.com/funstuff/voices-of-devs/

2013 Events Calendar
For an up-to-date events listing, check our online calendar at www.audiomedia.com

January 24-27
NAMM 2013
Anaheim, USA

January 29-31
Integrated Systems Europe
Amsterdam, Netherlands

February 4-6
Siel
Paris, France

February 6-8
AES 49th Conference – Games Audio
London, UK

February 7
Music Producers Guild Awards
London, UK

February 26-28
BVE
London, UK

March 5-9
CeBIT
Hannover, Germany

March 12-14
Cabsat MENA 2013
Dubai, UAE

April 6-11
NAB
Las Vegas, USA

April 10-13
ProLight + Sound
Frankfurt, Germany

April 10-13
Musikmesse
Frankfurt, Germany

April 17-18
Plasa Focus
Leeds, UK

May 4-7
134th AES Convention
Rome, Italy

May 21-23
PALME Middle East
Dubai, UAE

June 12-14
Infocomm International
Orlando, Florida

June 18-21
Broadcast Asia (Communicasia)
Suntec, Singapore

July 12-14
Develop
Brighton, UK

METAMORPHOSIS

The Changing Face of MEDIA & ENTERTAINMENT

NAB SHOW
Where Content Comes to Life

It's all about ME, and how the Mobile Experience is energizing the transformation of Media & Entertainment. Second screens are enhancing television with interactive content and applications. Broadcasters and new services alike are making more programming available, fueling the flight from appointment-based viewing.

Continue your evolution at NAB Show® with solutions that will enable you to Meet Expectations for the creation and delivery of dynamic content that thrives in Multiple Environments. It's a Marketplace Energized… showcasing tools and trends leading news and sports coverage, studio production, post, workflow and asset management as well as distribution technologies for every platform. Give yourself something to smile about. Register today!

NAB SHOW is:

- **91,000+** media and entertainment professionals
- **150+** countries; 63 delegations
- **$20.7** billion (USD) in purchasing power*
- **1,500+** exhibiting companies
- **74,000+** sq. meters of innovation
- **500+** skill-building sessions
- **90-year** history as most important annual event

International Audience Profile:

- **37%** are C-level executives
- **40%** represent Broader-casting®/Delivery Platforms
- **25%** are technical professionals
- **20%** represent Film/Motion Picture or Production/Post companies
- **12%** are looking for television programming

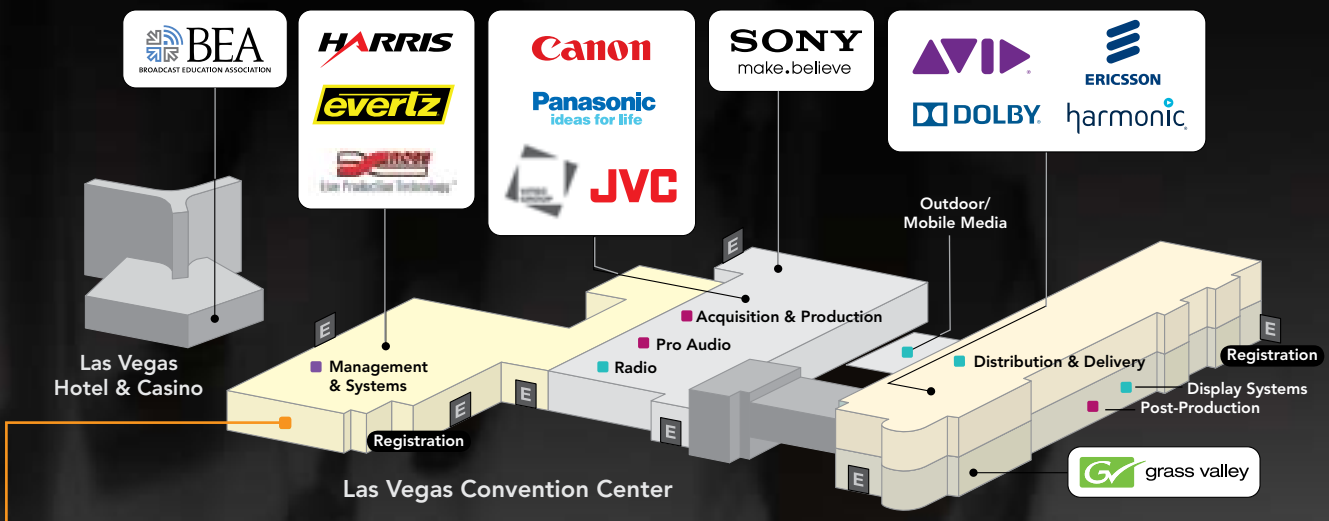
**Takes into account multiple attendees from the same company.*

NEW in 2013
Content Market – bringing together buyers and sellers of digital content – moves to the Wynn Las Vegas and Encore Hotel.

EDUCATION

This is the world's largest and most comprehensive educational program led by industry visionaries, media executives, award-winning filmmakers and technical experts. Conferences and Training include:

- Broadcast Engineering Conference
- Broadcast Management Conference
- Cloud Computing Conference
- Creative Master Series
- Disruptive Media Conference
- Military and Government Summit
- Post|Production World
- Post|Production World Certification Prep Classes and Exams
- Technology Summit on Cinema



Content Creation
Acquisition & Production
Post-Production
Pro Audio

Content Management
Management & Systems

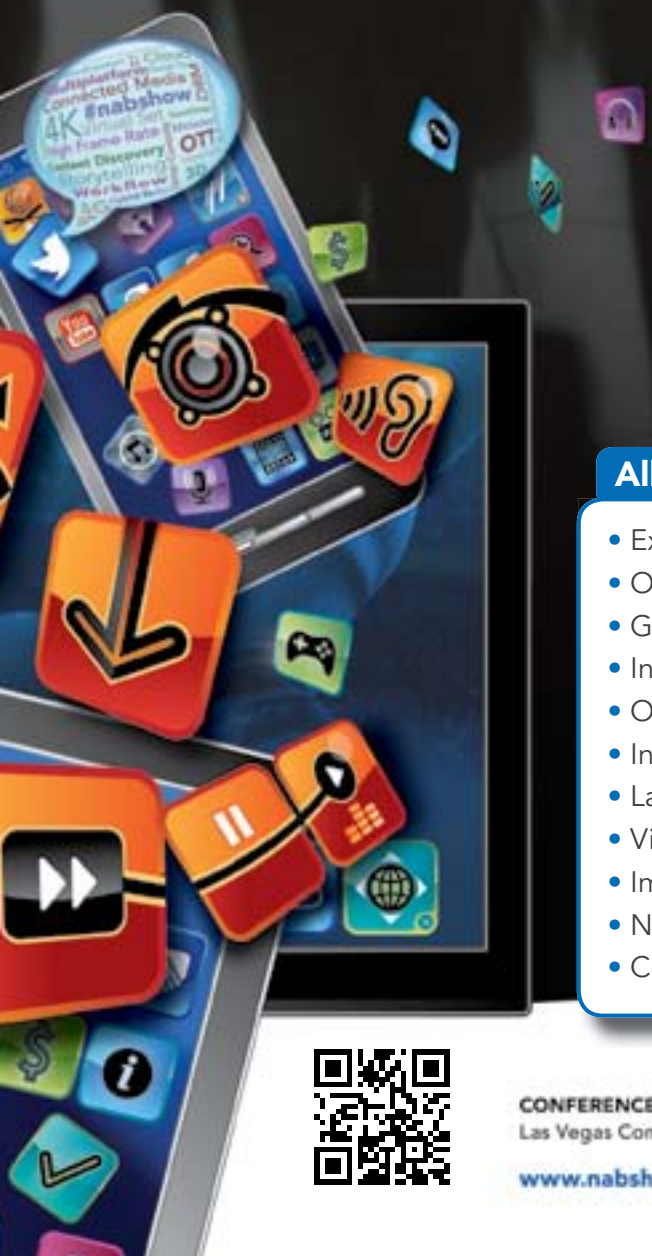
Content Commerce

Content Distribution & Delivery
Display
Distribution & Delivery
Outdoor/Mobile Media
Radio

Content Consumption
Connected Media World

NEW

In North Hall: CONNECTED MEDIA WORLD



EXHIBITS

As the global launchpad for the media and entertainment industry, NAB Show® provides the first look at the latest tools and solutions through interactive exhibits, on-floor education, live demonstrations, technology-focused pavilions and targeted destinations including:

- Cloud Computing Pavilion
- Connected Media World **[new]**
- Digital Signage Pavilion **[new]**
- International Pavilions
- International Research Park
- Mobile Pavilion **[new]**
- PITS — Enterprise Computing Pit **[new]**, Post Pit, Pro Audio Pit and Radio Pit
- StartUp Loft

All NAB Show Registrants receive access to:

- Exhibits and Technology Pavilions
- Opening Keynote and State of the Industry Address
- General Sessions
- Info Sessions
- On-Floor Education
- International Trade Center (ITC)
- Language Interpreters in the ITC
- Visa Application Assistance and Invitation Letters
- Import/Export Matching Assistance
- Networking Opportunities and Receptions
- Complimentary Shuttle Bus Service

FREE Exhibits-only Pass Use Code PA13

CONFERENCES April 6–11, 2013 / EXHIBITS April 8–11
Las Vegas Convention Center / Las Vegas, Nevada USA

www.nabshow.com

NABSHOW
Where Content Comes to Life

Join Us! #nabshow

Focus On New Products

Sonnet has added the Echo Express II to its Echo family of Thunderbolt expansion chassis for PCIe cards. The Echo Express II was designed for users needing a compact solution to connect two PCIe cards to their computers, and supports the majority of Thunderbolt-compatible PCIe cards. The Echo Express II adds a second slot to support two half-length (up to 7.25 inches long), full-height, single-width PCIe 2.0x16 cards.
www.sonnettech.com

RØDE Microphones has announced a new addition to its line of broadcast and AV products, the Reporter. Designed for handheld interview and presentation applications, the Reporter features an omnidirectional dynamic capsule that has been designed to offer freedom of use without, RØDE claims, the 'technique related issues typical of directional end-address microphones.' Its frequency response has been specifically tailored for voice reproduction.
www.rodemic.com

KMR Audio has announced its exclusive UK dealership of the range of products from US company Serpent Audio. All handmade in Philadelphia, the first to arrive is the SB4001 500 Series stereo buss compressor module. Building on the SB4000 DIY Compressor, the SB4001 features Quad VCAs, six ratios, 10 attack times, high pass/boost/slope side chain filters, wet/dry blend control, external (key) input, classic stepped release settings, classic and alternate auto release, variable release control, and 'grind' mode (a proprietary valve style harmonic drive adding vintage colour).
www.kmraudio.com

Focusrite has announced several new products, which will be officially launched at NAMM 2013. The Red 1 500-Series Mic Pre is a module for the 'lunchbox' format, featuring original Red circuit topology and components. It is a mono mic pre-amp that uses the same circuit design and components as the Focusrite Red mic pre, which was itself a direct implementation of Rupert Neve's original ISA110 design. It features the same Lundahl LL1538 input transformer and custom Carnhill output transformer as the original Focusrite Red 1 and Red 8 microphone pre-amps. It also has a Grayhill gold-plated military-grade gain switch, which offers repeatable results when using the switched gain structure of the mic pre to accurately recall pre-amp settings. A gain range of 66dB and a 'carefully-chosen' input impedance makes it suitable for almost any microphone; while a built-in backlit VU meter features calibration to ensure accurate levels.

Also being released is the Scarlett 18i20, the latest in Focusrite's series of USB 2.0 interfaces. It has 18 inputs and 20 outputs in total, and eight Focusrite microphone pre-amps with switchable phantom power. Precision 96kHz/24-bit A-D converters give an excellent dynamic range via analogue mic/line inputs, all fitted with combination XLR/jack input sockets. Two of these are on the front panel and offer additional hi-Z instrument modes and a switchable 10dB pad. An additional eight channels of digital I/O are provided via ADAT lightpipe, with S/PDIF providing an additional stereo input and output. It also features dual independent headphone outputs and a dedicated monitor control section. Scarlett 18i20 ships with a large software bundle, including Ableton Live Lite, Focusrite Scarlett suite, Novation Bass Station, and 1GB of Loopmasters samples.

"...The RedNet 6 MADI bridge... allows seamless integration of MADI and RedNet networks."

The RedNet 6 MADI bridge, which will be shipping Q2 2013, allows seamless integration of MADI and RedNet networks. It bridges between the MADI (AES 10) digital audio interface and Focusrite's Dante-based RedNet network. It has asynchronous sample rate converters (ASRC) on each input and output. RedNet 6 also has both Optical and Coax (BNC) connections, in addition to external word clock input and output.
www.focusrite.com

Panning Eclipse

Innovason has announced the integration of its new PANDORA digital panning algorithm into a software release for Eclipse and Eclipse GT consoles, NOVA 2.4.0. PANDORA was designed to address the problem of panning in live situations with a big audience, where people seated outside the centre of the PA zone do not hear the same nicely balanced mix that those seated in the middle do. The PANDORA function enables panning with no loss of information from left to right.

In addition to the integration of PANDORA, NOVA 2.4.0 includes a number of other improvements and upgrades, including better support of AVM500 Matrix and

other third party EtherSound devices, improved stability and reactivity of Neumann Digital Microphone control, and a number of bug fixes.
www.innovason.com

Get d:facto Straight

DPA Microphones has announced the launch of the d:facto II vocal microphone at the forthcoming 2013 NAMM Show. It offers a natural sound, high separation and extreme SPL handling, and in addition to use with the new wired DPA handle, also includes an adapter system that allows for seamless integration with many professional wireless systems.

"We are extremely proud to have developed an ingenious adapter range that brings the true DPA sound out of a wireless system," said Christian Poulson, CEO of DPA Microphones. "The wireless systems currently available deliver very limited power to drive the capsule, so getting the sound quality we

wanted was nearly impossible. We had to be creative and put a huge amount of work and thought into the electronic circuit of the adapter solution."
www.dpamicrophones.com

Quick Sennheiser PA

Sennheiser has announced the launch of its new wireless LSP 500 Pro loudspeaker at the forthcoming ISE in Amsterdam. It is supplied with an app that enables up to 20 loudspeakers to be remotely controlled at the same time. The speakers are connected to an external WLAN using the app, which makes it possible to control all of the LSP 500 Pro in operation via a mobile device, including selecting various application >

Your Compere Tonight...

UK based manufacturer Cartec Audio has launched its own 500 series enclosure, the Compere 500. It is 19-inch rack mounting as standard, with a total of eight slots. An internal heavy duty power supply provides up to three amps per rail, allowing users to run a combination of modules from Cartec Audio's own Pre-Q5 pre-amp, Fe-Q5 EQ, or from other manufacturers without sonic degradation.

The Compere 500 has assignable front panel input XLR, in addition to eight input and output XLRs for each module slot. Users will be able to act as 'compere' and introduce the front panel input signal to any one of the eight modules via the front panel aux to input module rotary switch and associated +48v phantom power switch. This is intended to provide uninterrupted phantom power when switching to different pre-amp modules. The aux to output module rotary switch selects which module carries the output and audio appears on the dedicated rear-mounted routing section output XLR socket.

This enables users to quickly plug something into the front of the rack – or the dedicated rear-mounted routing section input XLR for neat patch bay installations – and make comparisons with different pre-amps, compressors, or EQs. The regular module's XLR I/O audio path is defeated while the Aux Compere function is activated for that module. In addition, at the rear of the rack each module slot has a link switch which routes the output of a module into the input of the next module slot to the right.

"...An internal heavy duty power supply provides up to three amps per rail..."

Each Compere 500 will ship complete with four blank modules, and has a retail price of GB£499.

Universal Audio has released UAD Powered Plug-ins v6.4 software, which offers 64-bit UAD plug-in support for Windows 7 64-bit edition operating system. The UAD-2 Satellite FireWire and Apollo are now compatible, using a qualified adapter card.
www.uaudio.com

Radial Engineering has launched the new 500 series compatible Submix 4x1 mixer, with the dual-gang 'accustate' input circuit that adjusts sensitivity with gain so separate pads and gain controls are unnecessary. Submix can be cascaded with other units to create larger mixers, and two units can be used for stereo applications such as effects returns and summing.
www.radialeng.com

Behringer has announced a major collaboration with Klark Teknik in the development of its XENYX QX Series mixers. The eight new models feature custom-designed FX engines from Klark Teknik, with 32 studio-grade presets, dual addressable parameters, Tap function and storable user settings, plus wireless-ready integration with Behringer's upcoming ULM Series digital wireless microphones.
www.behringer.com

> modes, controlling the volume or adjusting the equaliser. "This significantly reduces the amount of time needed to set up and take down a PA system," said Martin Gurnter, Portfolio Manager at Sennheiser's Integrated Systems Division. It is compatible with microphones from Sennheiser's evolution wireless 100, 300, and 500 series.
www.sennheiser.com

Get A SixPack

Radial Engineering has announced the SixPack, the latest Workhorse power rack designed for the 500 series module format. The SixPack is Radial's sixth power rack in its 500 series range. It is a six-slot power rack designed to accommodate all 500 series modules including older ones made by API. It features 1600 milliamps of current, offering more than 256 milliamps average power per slot, allowing the user to mix and match solid state and tube modules without concern about powering. The external supply also provides 48V phantom power for mic pre-amps. Protective circuitry in each slot safeguards the SixPack and other connected modules against malfunction or short circuits. Modules may be patched in series using the FEED switch and stereo mated using the LINK function.
www.radialeng.com

In The Q

Alcons Audio has introduced the QR24 line-source array column; a module two-way column loudspeaker to be used as a vertical array system for both permanent and portable applications. Throw and low-frequency directivity can be increased by extending the array length; multiple individual mid-high frequency lobes can be made by using the QM low-mid fill columns. The QR is 26-inches in length and is fitted with four 6.5-inch woofers and two purpose-built 12-inch pro-ribbon drivers. The drivers have less mounting depth and so accommodate a co-axial driver arrangement with the LMF transducers, which actively cool the RBN drivers for power compression reduction. By using only two 12-inch RBN drivers, the system's active frontal radiation is nearly 90%, for sharply-controlled vertical dispersion.
www.alconsaudio.com

Scalable Snake

Behringer has announced that its Digital Snake S16 is now shipping. An integral component of Behringer's X32 Digital Mixer family, the S16 provides a scalable solution for remote microphone inputs connected via Cat-5e cable. The S16 features 16 Midas-designed digital programmable, remotely controllable mic pre-amps, identical to those found in the X32 console. Additionally, S16 offers eight analogue, servo-balanced XLR lines, as well as 16 ADAT digital outputs that can be used in splitter mode and/or stand-alone multi-core applications. Dual MIDI ports provide bi-directional control of devices, while dual AES50 network ports allow up to three S16s to be cascaded.
www.behringer.com

Antelope Leaps For Orion

Antelope Audio has announced the Orion 32, the 'world's first 32 channel AD/DA converter and audio master clock in a 1U rack'. The new device supports both MADI and USB interfaces, clocked by Antelope's 64-bit Acoustically Focused Clocking (AFC) technology. Orion 32 allows 192kHz I/O streaming of 32-channel digital audio through its custom-built USB chip, which provides simple connectivity to any USB-enabled DAW or computer. The converter also provides 32 channels of 96kHz audio through its fibre optic MADI I/O connections. It also supports ADAT protocol
www.antelopeaudio.com

Lynx Leverages Midas

Lynx Studio Technology has developed hardware to transport audio from the Midas digital mixing platform to a computer. Midas uses the AES50 interface to transport digital audio signals efficiently and without loss in quality. "The AES50 protocol essentially acts as a digital snake, making it easy and inexpensive to move audio between any two points on the network," said Phil Moon, VP of Sales and Marketing for Lynx Studio Technology. "That allowed us to develop a PCI Express card, the AES16e-50, which ports that audio from any Midas AES50 jack directly into your Windows or Mac computer. This allows you to use any common recording software – Nuendo, Pro Tools, Logic, Reaper, Sequoia, whatever – to capture the performance. And because the protocol is bidirectional, you can also play it back through your Midas console with no additional hardware. You can also use it to interface with other external devices, such as a Waves plug-in suite."

"… because the protocol is bidirectional, you can also play it back through your Midas console."

All Midas consoles, as well as sister company Behringer's new X-32 mixer, offer multiple open AES50 ports. The system uses some of them to connect the system's control surface, I/O system and system engine, but offers multiple extra ports to allow external signal transport. Because the AES50 ports are already native to the Midas digital architecture, it eliminates the need for extra peripherals like MADI cards and bridges.

Jim Roese, owner of RPM Dynamics, worked with Lynx Studio Technology and Midas to develop a turnkey system, the RPM-TB48 I/O, which can turn any modern laptop into a 48-channel multitrack recording system. "While there are other protocols available to do the same job, the beauty of the AES50 system is that it's native to the MIDAS digital system, which makes it much more affordable," said Roese. "It's totally stable and very low latency." The system includes a pair of Lynx Studio Technology AES16e-50 PCI Express cards in a specially modified Sonnet chassis with externally mounted Ethercon jacks.

www.midasconsoles.com

AcousticPerformance By QSC

QSC Audio products has launched its AcousticPerformance line of two-way, full-range loudspeakers, aimed at installed sound reinforcement applications which require higher SPL and a stylish enclosure. All models feature a three-inch voice coil, high power-capacity compression driver, combined with high-output woofers to deliver full bandwidth reproduction.

"In keeping with QSC's loudspeaker design philosophy, all AcousticPerformance loudspeakers feature Directivity Matched Transition (DMT) which matches the compression driver to the natural coverage angle of the woofer in the cross-over region," said Phil Sanchez, QSC Loudspeaker Product Manager.

AcousticPerformance models can be used in passive mode to minimise amplifier channel count, or bi-amp mode for greater control and performance. Bi-amp and full-range tunings using QSC Intrinsic Correction techniques are available for Q-Sys and future QSC products.

www.qsc.com

Compliant Babyface

RME has updated its Babyface portable USB interface with two new features: full USB Audio 2.0 Class Compliance for connections to the iPad; and a stand-alone mode. The Babyface now operates in three different modes: driver-based USB 2.0 (as before), stand-alone mode, and class compliant USB Audio 2.0 (CC) mode. Connecting the Babyface to an Apple iPad or iPad mini will make all connections available to audio apps, including Babyface's microphone pre-amps, balanced line level outputs, hi-power headphone output, SPDIF and eight-channel ADAT digital interface, and the MIDI connections. The update is free of charge.

www.rme-audio.de

RTW has launched the TMR7, for loudness metering in radio broadcasting. TMR7 is a four-channel system that has two AES3 digital inputs via XLRs that are configurable for mono, stereo, or multi-channel sources, or for parallel monitoring of the

on-air signal and a PFL source. The loudness module includes ITU loudness metering plus LRA loudness range measurement and true peak, which are all required for compliance with EBU R128. TMR7 is available in a desktop, rackmount or OEM configuration.

www.rtw.de

Kush Audio has unveiled the

Electra, or 'Electrified Transient Equaliser', a four-band, multi-topology EQ. The Electra has two fully sweepable, overlapping Proportional-Q bands with gain and bandwidth tailored to allow for extreme pushes. A fixed low shelf interacts with the continuously variable 12 dB/octave HPF to 'reshape, de-clutter and tighten up even the most unruly low end'. A switchable fader mode converts the low shelf knob into a fader so multiple Electras can be used to create lunchbox-based mixers with fader and EQ.

www.thehouseofkush.com

NUGEN Audio has announced that its ISL True-Peak limiter plug-in now supports Avid AAX format. "Avid created the AAX format with future expansion in mind, so it is only going to become more relevant to our customers," said Jon Schorah, NUGEN Audio Creative Director. "Our customers who rely on Avid editing tools can be certain that ISL will continue to be compatible with Avid products as they measure and correct for inter-sample levels in their audio."

www.nugenaudio.com

Native Instruments has introduced Abbey Road Vintage Drummer, a KONTAKT instrument featuring two vintage drum kits. The first kit consists of a 1940 Leedy 26-inch bass drum and two late-1930s tom toms once owned by James Blades. A 1940s Slingerland Radio King was also sampled. Both kits were recorded with a combination of state-of-the-art equipment and period microphones at Abbey Road Studios in London. Vintage Drummer includes brush articulations recorded to provide the authentic sound and style of the swing/big band era.

www.native-instruments.com

Garritan has released the limited edition Ultimate Collection. It combines six Garritan virtual software instrument libraries on one USB drive, including Classic Pipe Organs (with six historical pipe organs and 75 different stops), Concert & Marching Band 2, Instant Orchestra (an instantly playable orchestral library with many pre-packaged orchestral sounds), Jazz & Big Band 3, Personal Orchestra 4 and World Instruments (a collection of over 350 instruments from around the world). The Ultimate Collection works as a stand-alone program or as a plug-in.

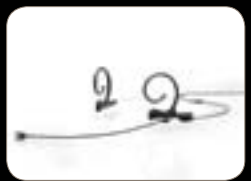
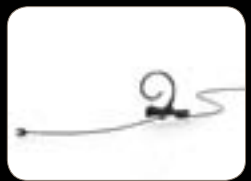
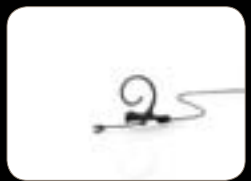
www.timespace.com

DPA MICROPHONES

d:fine™ headset mic

DPA's tried and true miniature condenser capsule in a sleek housing with a newly designed self-adjusting ear mount.

Intended for high performance, the DPA d:fine™ features superior transparency and increased protection against wind pop and noise, all with a low profile design.

▸▸▸ See the d:fine™ in action at www.dpamicrophones.com/dfine

Berklee In Valencia

Berklee College of Music has opened a cutting edge recording and teaching complex at Berklee's Valencia campus, designed by Walters-Storyk Design Group. The new campus is located at the Palau de les Arts Reina Sofia in Valencia, Spain. The studio facility is the final element of Berklee's first international campus, which recently launched its Master's programmes.

The audio production complex is comprised of five linked components. The 1,600-square-foot scoring stage/studio – Studio K – includes an 860-square-foot live room and has variable acoustic wall treatments. Supporting the live room is a 500-square-foot control room, two large ISO/overdub booths, and an isolated machine room, through which the entire facility is configured.

"We decided to employ Avid/Euphonix controllers to take advantage of their Eucon protocol that allows seamless migration of projects across the facility, all the way up to the flagship System 5," said Carl Beatty, Berklee Chief of Staff. "Additionally, when we install an identical console in Boston, we will be doing real time joint sessions between the two locations." The System 5 has 48 channels, with 128 channels of I/O and 176 mic lines.

Monitoring in the production suites is all Genelec – 5.1 surround in Studio A, and 2.1 stereo in Studios B, C, and D. The control room in Studio K features the Meyers Acheron 7.1 surround monitoring system, and also includes Griffin G2B Active main stereo monitors. "There are also midfield monitors available – ProAcs and Yamaha NS10s," said Beatty. "Additionally , the room has been designed to Dolby specifications and readied for the new Dolby Atmos Cinema Sound monitoring protocol."

"The recording studios and production suites at Berklee Valencia are simply sublime," said Composer and Visiting Professor, Laura Karpman, "In the studios I was able to compose, record and mix a film for Sony/Lifetime with a very fast turnaround."

www.wsdg.com

British drummer and percussionist Gavin Harrison, best known for playing with progressive rock band Porcupine Tree, has purchased AKG recording microphones, including a pair of C12VRs, seven C414s, and the new D12 VR kick drum microphone. "I used C414s on the last Porcupine Tree studio album at AIR studios when the engineer suggested using them on the toms," said Harrison. At his home studio, Harrison uses a pair of C414 XLIIs to capture room ambience, and a pair of factory matched C12Vr tube microphones for overheads.

www.akg.com

North London's Livingston Studio is open after major refurbishment. Studio 1, being run in partnership with Miloco and Mike Crossey, is centred around a 72-channel SSL 4072 G Series console with Ultimation, recording onto Pro Tools HDX with 48 channels of Avid HD 16x16 I/O. It is also possible to record through the Studer A80 MK11 24 track two-inch machine onto Pro Tools. Studio 2, a partnership between Miloco, Incognito, and Mo Hausler, is a Pro Tools tracking and mixing studio.

www.miloco.co.uk

Imogen Heap's Studio and Technology Manager Kelly Snook has added a PreSonus StudioLive 16.0.2 digital mixer to Heap's recording set-up. "I just love it. It's really small and compact but it does so many different things," said Snook. "It's doing something different almost every time we set it up. We've used it as a replacement for our old analogue mixer."

www.presonus.com

Danish Producer and Engineer Hans Nielsen, of Focus Recording Studios, has recently used DPA 4006A and 4011A microphones to record a choir of 500 monks in a Chinese temple that is over 4000 metres above sea level. "I did have other microphones with me but only the DPAs were able to cope with the extremely thin air. Everything else I tried was just too noisy and couldn't cope with the atmospheric conditions. I was incredibly happy with the results."

www.dpamicrophones.com

MPG Awards Shortlist

The shortlist for the MPG Awards has been announced. Nominees include Al O'Connell, Guy Massey, and Haydn Bendall for Recording Engineer of the Year; Dave Sardy, Tchad Blake, and Vance Powell for International Recording Engineer of the Year; Charlie Hugall, Dan Austin, and Lee Slater for Breakthrough Engineer of the Year; and Alan Moulder, Mark 'Spike' Stent, and Tom Elmhirst for Mix Engineer of the Year. Mastering Engineer of the Year is being contested by Mandy Parnell, Matt Colton, and Ray Staff, while Studio of the Year nominees include Black Wookie Studios, RAK Studios, Snap! Studios, and Sphere Studios. Two new awards – the MPG Inspiration Awards and MPG Innovation Award – will also be presented at the ceremony on February 7, while Sir George Martin will receive the Guild's Outstanding Contribution to UK Music Award.

www.mpgawards.co.uk

SSL Builds On The Mudrock

MudRock Recording Studios, a commercial recording facility in Texas, has installed a Solid State Logic AWS 948 Hybrid console/controller. "MudRock Recording Studios was built to rival studios found in Nashville and LA, offering high-end recording services for bands and artists in our region," said Anthony Nieto, Record and Mix Engineer for MudRock. The AWS 948 was everything we needed to get going from the top level." The studio features The Ballroom, which provides a 640-square-foot stage and 200-seat capacity for showcasing bands and hosting events. The Ballroom is set for the production of music videos. The Live Room is large enough for up to eight musicians/singers, with the Ballroom doubling as a giant drum booth for heavier sessions. Both rooms are connected to the AWS.

www.solidstatelogic.com

Colorado Docks In Remote Bay

The Studer Compact Remote Bay and its Virtual Vista software recently had its first-ever use at a recording session, at Colorado Sound Recording Studios. The Compact Remote Bay allows access to a Studer Vista digital mixing console's settings from anywhere in a venue. "We used the Compact Remote Bay to record a studio session band to allow Colorado Sound and HD NET, and the Mobile TV Group who were also at the session, to put the Compact Remote Bay in the recording studio's tracking room and interfaced it with the Vista 9 console in the truck to record the piano, bass, and drums session band," said Rob Lewis, Director of US Sales for Studer.

www.harman.com

ProSound Network BEST of SHOW

AUDIOMEDIA GEAR OF THE YEAR 2013

twotwo™

reference monitoring all ways

The ultimate in flexible compact monitoring

ATL™
Advanced Transmission Line

PMC's new **twotwo** series 2-way active monitors make choosing and using a reference monitor easier than ever before. Plug in some audio, and you're good to go, be it analogue or digital, in stereo or surround, on phonos or XLRs — and all A/D or sample-rate conversion is taken care of on board. Whether you're driving the **twotwo**s digitally from an assignable console in a world-class studio, or plugging them into a laptop via a phono lead in a hotel or rehearsal room, you can work smarter and faster — and with the sonic transparency and accuracy that has made PMC speakers the reference monitors of choice amongst the world's audio elite.

All three **twotwo** models produce an expansive sound, their compact dimensions belying their impressive extended low-frequency performance, wide dispersion and stable, accurate imaging. A powerful onboard DSP engine optimises the response of the drivers and guarantees a flawless crossover, and the unique built-in dual-amplification system produces high-resolution audio with unparalleled headroom and detail. The **twotwo** series has also been carefully designed for use vertically or horizontally, without any detrimental effect on tonal quality, stereo or surround imaging; so with the **twotwo**, the only way is both.

For the full low-down on what's up, turn to **www.pmc-speakers.com/twotwo** and visit us at **NAMM '13, booth 7017**

T +44 (0) 870 4441044
E pro@pmc-speakers.com

PMC®
www.pmc-speakers.com

California Dreaming For SSL

KVIE, a PBS member station that serves nearly four million viewers in the Sacramento/Modesto/Stockton area of California, has upgraded its Audio Control Room A with a Solid State Logic C10 HD Compact Broadcast Console. The console replaced an ageing analogue desk.

"We have only one production control room and when we made the change to HD production, we needed a contemporary audio console that could handle our different production situations," said Greg Johnson, Director of Engineering for KVIE. "We were used to working in analogue, so the ergonomic layout of the C10 was immediately familiar and desirable from an engineering and operational standpoint. We like the fact that all the processing is right there in the console. Other manufacturers that we looked at seem to offer a more distributed resource model that is not very straightforward to work with. The C10 gives us a very powerful, feature-rich console that offers SSL's traditional user friendly layout, service and support."

The physical layout of KVIE encompasses one HD production control room, with an attendant audio room, servicing the needs of two production studios. The larger 50 x 75-foot studio is a full sound stage for larger and more complex productions along with a smaller 45 x 40-foot studio used for smaller productions and fundraising events.

The station ordered SSL's Dialogue Automix and C-Play options to help with production workflow. Dialogue Automix, used for panel-type productions, allows the general staff to manage the console when necessary, while C-Play offers a full functional spot and music playout system integrated into the console.

"With the C10, we can have non-professional audio staff successfully operate the console," said Jeff Hansen, Maintenance Technician for KVIE. "We also rent out our facility to outside production companies and SSL's reputation enhances our ability to market the facility."

www.solidstatelogic.com

Clear-Com has supplied Viewpoint Production Services in Pittsburgh, USA, with a 112-port Eclipse-Median matrix intercom for its VPS 36HD production truck. Viewpoint required an intercom system that was adaptable to each production's demands. The new Eclipse-Median system frame was mounted within the upper racks of the truck's audio room, to allow engineering staff and audio personnel to monitor activities and make adjustments to the optional interface cards that were installed.

www.clearcom.com

US-based broadcast sales and rental company Talamas Broadcast has added more DPA microphones to its equipment arsenal. It recently purchased 26 DPA d:fine headset microphones, 35 d:vote 4099 instrument microphones, and several miniature microphones. "With this recent purchase, I bought more than I usually would," said Dave Talamas, President of Talamas Broadcast. "I felt I had to take advantage of the opportunity to supply my customers with the latest microphone technology."

www.dpamicrophones.com

The School of Communication at Hofstra University, Long Island, New York's largest private college, has replaced the analogue broadcast production consoles in its two TV studios with Soundcraft's Si Compact 32. Joseph J. Valerio, Chief Video Engineer, said that the console is well suited to an educational environment. "The students, with some basic training, essentially programmed the configurations and handled the mixes themselves with no problems."

www.soundcraft.com

Calrec In Pinewood

Calrec has announced that Pinewood Studios Group has installed an Artemis Beam console in its new 5.1-capable sound control gallery to mix audio for live and recorded television shows. The sound control gallery is part of a new television studio in Buckinghamshire, England, which includes all new control galleries and equipment.

"Our technical team evaluated several consoles in the process of selecting a sound desk for our new TV studios, and preferred the Calrec Artemis," said Pinewood Broadcast Director Paul Darbyshire. "We were looking for a desk that would provide more channels both in and out, along with greater flexibility and ease of programming. With the Artemis we feel we have achieved that and more."

www.calrec.com

Zest for Orator

Portable production specialist Zest4.TV has purchased a Trilogy Orator intercom. The new addition allows the company to connect directly to other production systems in use at events. "We work across the live event, AV, and small OB markets, so every day is different for us," said Simon Roe, Managing Director of Zest4.TV. "We needed to replace our ageing talkback equipment with something that would give us all the functionality we could ever need regardless of the application."

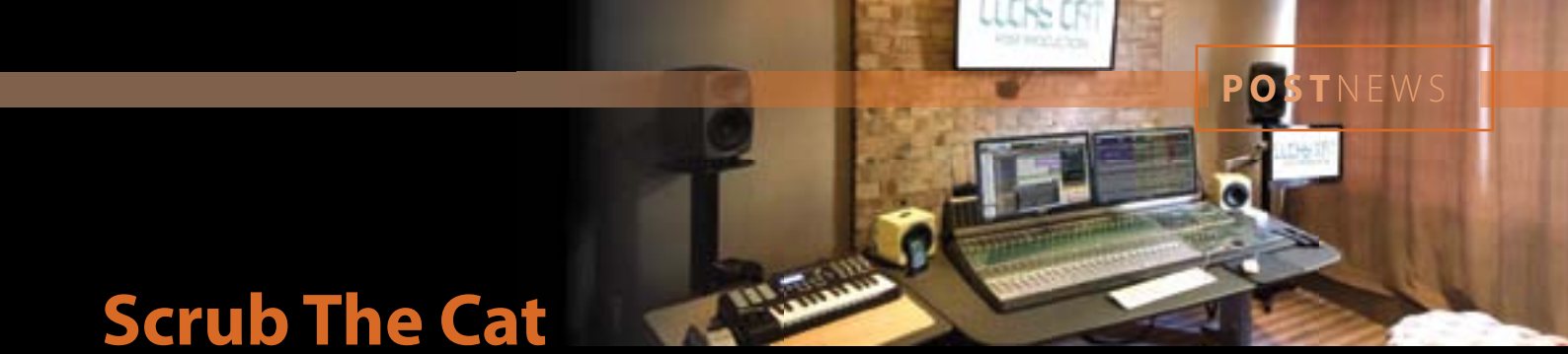
Orator is a compact digital matrix system, providing for up to 36 points in a 2U cabinet, including as many as 18 cameras. Panels allow users to determine who they are going to talk and listen to, and every user has individual level controls.

www.trilogycomms.com

Patching South Korea

Bittree, a manufacturer of audio and video patching systems, has announced that its South Korean partner, Sion Media, has been contracted by Seoul Broadcasting System (SBS) to supply Bittree patchbays for its new facility, the SBS Prism Tower. SBS, one of South Korea's largest broadcasters, purchased 80 TT (Bantam) audio patchbays for two of its channels, SBS Plus and SBS Golf. The SBS Prism Tower will support a total of six new HD channels. "Integrators and systems designers alike specify Bittree because they trust the high quality of Bittree patchbays as a reliable back-up system for signal routing," said Johnny Lim, Sales Manager at Sion Media.

www.bittree.com



Scrub The Cat

Scrub, a division of HHB Communications, has worked with Lucky Cat Post Production to provide sales and technical support for the firm's new Pro Tools-based audio department. The business has recently moved to larger premises on Poland Street, Soho, from its original location on Margaret Street, to make space for audio post production suites that complement its existing video department.

Sales and Technical staff at Scrub and HHB helped Lucky Cat Audio Engineer Craig Budd decide on a system that would succeed in the competitive neighbourhood. The final set up includes an Avid D-Command console, Pro Tools HDX and v10 software, a Genelec DSP monitoring system, and other equipment from Neumann, Blackmagic, and Focusrite.

Budd considers the D-Command with Pro Tools HDX essential for handling the varied amount of work that Lucky Cat handles. "We have numerous types of project coming through the door, so I need a lot of faders at my disposal, and the D-Command is the perfect size," he said. "The new HDX system is also very powerful and reliable, which allows me to be quicker and more creative."

The Genelec system with DSP also gives an added advantage. "I have been using Genelec loudspeakers for the past 12 years because they translate very well to TV – they sound great and I can trust them. Since I was coming into a new room that I was unfamiliar with, I wanted that extra peace of mind that the DSP provides because I know they are aligned specifically for the space.

"We need to be certain our new facilities stand up to the test without fault. Both Jon (Myers, Owner of Lucky Cat) and I have had a relationship with the people at Scrub for many years, and they have always impressed me by being technically astute and very accommodating."

Devin Workman, from Sales at Scrubs said: "Craig and Jonathan are very experienced and well known in the post production world, and they knew what they wanted from the start. It became our job to support them along the way and ensure that the installation went smoothly, without any technical interruptions."

www.luckycatpost.co.uk
www.hhb.co.uk

Atmos Spreads Round The World

DOLBY ATMOS

Sixteen cinemas across eleven countries in Europe, the Middle East, and Africa have now been fitted with Dolby Atmos. It has also just been announced that the latest instalment of the *Die Hard* franchise, *A Good Day to Die Hard*, will be released in Dolby Atmos in February. Twentieth Century Fox has confirmed that the action thriller will be studio's fourth major release in Dolby Atmos, following *Taken 2*, *Chasing Mavericks* and Ang Lee's *Life of Pi*. The fifth film in the *Die Hard* series will be mixed in Dolby Atmos in the Zanuck Theatre post-production facility on the Twentieth Century Fox lot.

Additionally, two new international films, German mystery thriller *Lost Place* and British crime thriller *Trance* will be mixed and released in Dolby Atmos.

www.dolby.com

Landing At MediaCity

A new space has been officially opened at MediaCityUK in Salford. The unique space, spanning over seven floors and 53,500 square feet, is billed as a 'high-tech hub', the first of its kind outside of London, and the UK's only digital workflow centre. It combines state of the art facilities, studio and lab services, managed work space, and social space. The Landing was developed by Salford City Council, who committed £3.6 million to the project, with £10.6 million in external funding coming from the North West Development Agency and the European Regional Development fund. The Landing is split into three areas, with Manchester post facility Sumners leading the content production section. The facility was opened by City Mayor Ian Stewart and Chief Executive of Salford City Council Barbara Spicer.

www.mediacityuk.co.uk

Hackenbacker Stinks

Hackenbacker undertook the entire audio post for one of the BBC's flagship Christmas programmes – a long-form 3D scripted adaptation of David Walliam's children's novel *Mr Stink*. "We are absolutely thrilled to have the opportunity to tackle this marvellous project," said Hackenbacker's Founder Nigel Heath. "Working on children's drama is always enjoyable as it allows us to get in touch with our 'inner child'. This one in particular requires a suitably immersive soundtrack because it is being produced in 3D. It also has a fantastic story with plenty of scope to be adventurous with the audio."

www.hackenbacker.com

Argosy Console has announced the new Mirage for Nuage, a workstation for Yamaha and Steinberg's Nuage integrated audio production system. The Mirage workstation is available in two models, the Mirage Nuage 32LS-B-B in standard black, and the Mirage Nuage-32LS-B-M with mahogany hardwood trim. Both models feature a sturdy tubular steel frame and powder coated steel legs and body panels, concealed cable trunking, and padded armrests in front of each of the racks.

www.argosyconsole.com

Glasgow post company Savalas recently worked with 343 Industries and Axis Animation on XBox 360 game *Halo 4 Spartan Ops*, for almost a year. " When Stuart (Aitken, *Spartan Ops* Director) approached us for this project, we had no idea that it would take over our lives in such a fulfilling way," said Mixer Kahl Henderson. "It's very unusual for us to immerse ourselves in only one project for such a long time. You end up approaching things and trying out ideas in such a different and experimental way."

www.savalas.co.uk

Los Angeles facility Therapy has taken on Sound Designer Eddie Kim. He has worked on feature films including *8 Mile, Riding Giants, Dogtown* and *Z Boys*, and video game titles including *Prince of Persia: Warrior Within*.

www.youneedtherapy.tv

LipSync will provide equity investment and post-production services for *Desert Dancer,* produced by Crossday Productions. *Desert Dancer* tells the true story of Iranian dancer Afshin Ghaffarian, who risked his life to become a dancer despite a nationwide dancing ban. The film stars Freida Pinto and Reece Ritchie. LipSync previously worked with producer Pippa Cross on Knife Edge. "My previous experience working with LipSync's talented team demonstrated that I could wholly trust them to deliver highly creative work, on time and within budget," said Cross.

www.lipsyncpost.co.uk

Stavanger Opens Concert Hall

The new home of the Stavanger Symphony Orchestra, the Stavanger Concert Hall, has opened, featuring two halls which use DiGiCo mixing consoles to mix the amplified sound in both. Designed by Oslo architects Ratio Arkitekter, the 13,800m² venue has been designed to host all types of cultural events. Each of the two halls – one for orchestral music, the other multi-purpose – has its own independent soundproofing and load bearing systems.

The Fartein Valen (symphony hall) has 1,500 seats and the ceiling can be lowered up to six metres to alter the acoustics. The acoustics can also be changed using 13 adjustable acoustic reflectors. Capacity of the Zetlitz (multi-purpose hall) varies between 700 seats for opera, 800 for musicals, 1,400 for conferences, and 1,900 (with a flat floor) for rock concerts.

Designed and supplied by DiGiCo's Norwegian distributor Bright A/S, the project features two DiGiCo SD7s, two SD8-24s, an SD10, and six SD Racks (both fixed and portable). Both halls have a normal set-up of 112 input lines and 62 output lines, but these can be expanded when needed. A full fibre optic network has connection points spread throughout the venues.

"The ability to share resources on the optical loop is fantastic," said Head of Sound Johan Berntsen. "Sum mixes are sent on the virtual tie-line system, being picked up where needed. The time needed for doing a soundcheck of the Stavanger Symphony Orchestra has been halved. It's absolutely brilliant."

"For many of the in-house engineers this has been their first experience of DiGiCo consoles and their feedback is very positive," said Truls Birkeland of Bright A/S. "The stability and flexibility of the system has been highly praised and the engineers love the functionality of the consoles."

www.digico.org

EM Acoustics' HALO Compact line array system has been installed into the People's Palace, in London's East End. Owned by Queen Mary, University of London, the Queen's Building (as it is now known) is home to the 750-seat Great Hall. The theatre has just undergone a £5.7 million facelift, which included the installation of a new PA system. Stage Electrics' Jamie Gosney provided the design: "We were working to very tight deadlines, but from the moment we switched the system on, there were smiles all round."

www.emacoustics.co.uk

Sting has used DPA Microphones' new hand-held d:facto vocal microphone on his recent Back to Bass tour. Sting's Front of House Engineer Howard Page said: "The d:facto's definition and clarity was a huge update on our Sting shows. It is an absolutely unique microphone that has an amazing transient response and just the right amount of proximity without the normal problems of on/off tonal differences."

www.dpamicrophones.com

The Turbosound Flashline line array loudspeaker was used recently for Alanis Morrissette's London O2 concert. The gig was the first time the system had been used in a venue as large as the O2. "When I spoke to Bryan Grant and Lez Dwight at Britannia Row about the Turbosound Flashline system, they said 'you have to try it – you will definitely like it', and I do," said Morrissette's FOH Engineer Maurizio Gennari.

www.turbosound.com

The Sound Of Peace

The 2012 Nobel Peace Prize Concert took place on December 11 at the 9,700-capacity Oslo Spektrum arena, one day after the European Union was awarded this year's Nobel Peace Prize. The event was broadcast to more than 100 countries worldwide, and this year Oslo-based event sound supplier AVAB CAS used a Meyer Sound LEO linear large-scale sound reinforcement system.

Artists such as British soul singer Seal, Portuguese trio OqueStrada, Romanian Gypsy brass performers Ciocarlia as well as Ne-Yo, Kylie Minogue, and Milow performed to an audience of national leaders and Nobel laureates.

"LEO is a great product and we are thoroughly behind the principle of linearity," said Asle Nilsen, Head of Pro Audio at AVAB CAC. "It's one of the most high profile events of the year and there is no scope for error – but having LEO onboard has definitely helped to calm our nerves."

www.meyersound.com

AXYS Says Goodnight

The stage adaptation of WWII evacuee story *Goodnight Mister Tom* has been touring the UK and is now in the West End. Sound design for the production is by Gregory Clarke, who specified Duran Audio AXYS loudspeakers. "After a great experience with the AXYS loudspeakers on Misterman at the National early this year, I decided to use them again on this production when it came into the West End," said Clarke. "The proscenium system is made up of six AXYS Scope T2115 with another two AXYS Scope T2112 as a centre cluster. One of the amazing things about them is you put them up in the air and point them at the audience and they sound great out of the box."

www.duran-audio.com

All We Need is Radio GaGa

The Institute of Professional Sound will hold its annual training weekend at the National Film and Television School in Beaconsfield, UK on February 9-10. This year's event, Radio Ga Ga, will attempt to demystify the world of RF.

The weekend will cover basic RF theory, radio mics, IEMs, radio communications/links, and how they all fit together. Many sessions will be practical, allowing delegates to handle equipment and take part in listening tests. Spectrum planning and the legal side of RF will also be covered. The future will be discussed, looking into digital radio and large area diversity systems. Evaluations of differing analogue and digital systems will take place throughout the weekend, and conclusions discussed in a final question and answer session.

www.ips.org.uk

Cenzo Mixes On Focal SM9s

Cenzo Townshend *Mix Engineer & Producer*

When Focal say: "listen to your music, not your speakers" they're not kidding. I listen 'on' my SM9s, not 'to' them. They don't fatigue my ears, so I actually enjoy listening to music on them.

In 2012 alone, Cenzo's credits include Vaccines, Maccabees, Florence and The Machine, Devlin, Friendly Fires, and Benga. During his career he has mixed countless best selling albums and singles from artists including U2, Snow Patrol, Elbow, Kaiser Chiefs, Everything Everything, Ben Howard, and many more.

Focal SM9

Subwoofer comes as standard.

With three specifically designed drivers, 600w of class AB amplification and an 11" passive radiator, the new Focal SM9 delivers an incredible performance, from the smooth highs of its Beryllium tweeter to lows, so low, you won't need a subwoofer. And with their patented Focus mode, allowing switching from 3-way to 2-way, you may no longer need your alternate monitors either!

Visit **www.focalprofessional.com** to find out why you need an inverted dome Beryllium tweeter

FOCAL® PROFESSIONAL

www.scvlondon.co.uk Distributed by SCV London: Call 020 8418 1470 for your nearest dealer

Art And Audio

Pennsylvania's James A. Michener Art Museum recently completed construction of the Putnam Pavilion. JBL AC28/95 compact loudspeakers are in use with a BSS Audio Soundweb London BLU-100 signal processor and BLU-BIB Break-In Box. "We used 16 of the JBL AC28/95s, which gave us significant output to cover the room," said Saben Shawhan, Senior Consultant at Metropolitan Acoustics. "These speakers provide a higher degree of control in the mid-range frequencies than what is available from any other speaker in this size and price range, and the speaker's 90 x 50-degree waveguide gave us the control over the high frequencies to keep them from bouncing off the glass."

www.harman.com

Yamaha Comes Up With A Smile

Steve Harley recently performed his first two albums, The Human Menagerie and The Psychomodo, as originally recorded with an orchestra and choir, at the Birmingham Symphony Hall, with three Yamaha digital consoles managing the mix. Featuring a nine-piece rock band, 25-piece orchestra and a 12-piece choir, the show's channel count came to around 90. Inputs came via four onstage Rio3224-D I/O units, with the choir and orchestra mixed on one CL5. The outputs for this console were fed to the 'master' CL5, which mixed Harley and his band and output the entire mix to the PA and house systems. Monitors were mixed on a PM5D-RH.

www.yamahacommercialaudio.com

Pro-Codec Version 2
Real Time Codec Auditioning
Master directly for iTunes
The revolutionary Sonnox Fraunhofer Pro-Codec plug-in enables the auditioning, encoding and decoding of audio with codecs such as mp3 and AAC, making it possible to produce online-ready mixes in real time!
Now with the inclusion of Apple's iTunes Plus codec you can mix directly for the "Mastered for iTunes" programme, monitoring the same clip behaviour as the iTunes encoding chain – saving you time and ensuring high quality output during the mixing process.
Also new in Version 2:
• 64-bit compatibility
• Additional codec – Fraunhofer MPEG Surround
• Additional codec – Apple AAC iTunes Plus (Mac only)
• AAC-LC support for 256kbps VBR
• AAC-LC and HE-AAC support for 96kHz sample rate
• HD-AAC support for 16-bit files
Sonnox
www.sonnox.com
Fraunhofer

Isis, a concert venue with an accompanying upscale restaurant and bar located in Asheville, North Carolina, USA, opened in December with an installed sound reinforcement system that includes eight Powersoft power amplifiers, including Duecanali, K and M Series models, all outfitted with DSP and Ethernet connectivity. "With these products I'm proud to say that we've created a landmark," said Tom Brokenburgh, Jr, of Summit Communications, who installed the systems. "This system feels and sounds better than anything I've ever come across in a 350- to 400-head room and we are just getting started."

www.powersoft-audio.com

West London-based rental company has supplied Skunk Anansie's Black Traffic tour with a d&b J-Series line array. Venues varied between 1,200 and 12,000 capacities. In its largest format the PA comprised eight d&b J8 speakers per side, with four J12 downs, with eight V8s left and right for the side hangs. Eight B2s a side went in for the the largest shows, arranged in a distributed bass array, along with four J-Infra subs. Onstage, there were four Q10s and four Q1s for in and out fills.

www.entec-soundandlight.com

A spiritual convention, in which 350,000 worshippers descended on the Indian city of Jalandhar, in the state of Punjab, had audio relayed over the site using an Optocore network, designed and supplied by production company SOUND.COM. Using Optocore's 2.14 protocol in a ring topology, and a combination of single and multi-mode fibre, they were able to deliver the signal digitally over the entire area. The PA system comprised a total of ten sound towers, each of which was assigned to an OptoRack, which distributed the signal and enabled local control.

www.optocore.com

Country superstar Toby Keith has opened a chain of performance venues, I Love This Bar & Grill, with a Midas Pro2 console in each location. "Trying to ensure great sound quality while avoiding technical issues across a national chain is a challenge," said Josh Maichele, President of LiveSpace, who handled the A/V systems.

www.midasconsoles.com

30 YEARS AND STILL...

The Lowest Prices... The Fastest Delivery... The Biggest Catalogue.

Phone us or go online and get your FREE copy today!

www.studiospares.com
Tel: 0844 375 5000 | Studiospares

© 2013 Studiospares Ltd. All Rights Reserved. All specifications are subject to change without notice.

Rialto Back To Glory

The languishing neo-baroque style Rialto Theatre in Montreal, originally constructed in 1924 by Montreal architect Joseph-Raoul Gariepy, has been restored to its former glory. The theatre is designated as a National Historic Site of Canada, and is now back in use as a centre for the performing arts. Technical upgrades included a brand new Adamson SpekTrix loudspeaker system powered with Lab.gruppen PLM with Dolby Lake processing. The ground stacked PA system is made up of four SpekTrix five degree boxes mounted atop a double 18-inch cardioid sub left and right of the stage, with a single T21 centre sub covering the floor level. The balconies features a second SpekTrix system. A Midas Heritage 3000 console for FOH and a M7-CL 48-channel console for monitors were also added, with full Shure and Sennheiser microphone lines. Adamson M Series M12 and M15 wedges powered by Powersoft are being used as flexible onstage monitors.
www.adamsonsystems.com

Three-piece vocal group Stooshe is using a pair of Soundcraft Vi1 digital audio consoles. "It's just perfect for this tour as the footprint's so small and transportation is so easy," said FOH Engineer John Delf. "We only have a small trailer on the back of a van but the two Vi1s fit in easily. I was also able to use my Vi6 show file from Stooshe's previous tour and it worked perfectly on the Vi1; that's a big advantage to have."
www.soundcraft.com

New York City's Birdland jazz club has installed a variety of JBL loudspeakers, including six VRX932LAP powered Constant Curvature loudspeakers, a pair of ASB6112 subwoofers, two Control 29AV loudspeakers, and six PRX612M powered portable PA speakers used as stage monitors. "The most important thing for me to be able to do is amplify the musicians' stage performances

in the most naturally sounding way so that the system is almost invisible," said House Engineer Richard Bernard.
www.jblpro.com

The 2012 MTV EMAs were held recently in Germany's Frankfurt Festhalle, and for the tenth

consecutive year, Sennheiser UK's Mark Saunders and Chief Engineer Andrew Lilywhite were in attendance to assist the show's audio provider Britannia Row and Sound Designer Derrick Zieba. The frequency count for radio mics and IEMs topped one hundred, and included Rita Ora using an SKM 2000 with 935 capsule, Alicia Keys on an SKM 5200 with 5235 capsule, and Muse also on SKM 5200 with a kk 105 capsule.
www.sennheiser.co.uk

North Carolina's Raleigh Museum of Natural Sciences has recently opened its new Nature Research Center, which includes the SECU Daily Planet – a three-storey multimedia space. A massive visual display runs continually, plus a small stage at ground level allows for live presentations. The exhibit resides in a dome-shaped room with two balcony levels extending seven feet into its centre. The challenge was met by Renkus-Heinz's Iconyx series steerable column arrays. The system includes eight Iconyx IC8-R-II steerable arrays for mains, augmented by SH61-2R two-way systems for surround, with three PN112SUN 12-inch powered subs.
www.renkus-heinz.com

A Ribbon Revolution
...the rules have changed

Steve Levine

There's a revolution underway in recording studios and on live stages stretching far and wide across the UK and beyond.

Renowned producer and Chairman of the Music Producer's Guild, **Steve Levine** has added his voice to a chorus of unswerving praise aimed directly at Audio-Technica's revolutionary **AT4080** and **AT4081** Ribbon Microphones:

*"Using the **AT4080** for vocals, it sounds instantly like a late 50's, early 60's session, but without the noise. It has that thick warm vocal sound reminiscent of so many great vocals of the era...*

*...The **AT4081** is now my first call when recording guitar amps... they sound so sweet..."*

AT**4080** - AT**4081**

Connect with us...
facebook.com/AudioTechnicaUK
twitter.com/AudioTechnicaUK

audio-technica
always listening
www.**audio-technica**.com

THE MUSIC PRODUCERS GUILD AWARDS 2013

Café de Paris

Thursday 7th February 2013

Shortlisted nominations

UK Producer of the Year *sponsored by the BRIT Awards 2013*
Damon Albarn
Jake Gosling
Paul Epworth

International Producer of the Year *sponsored by British Grove Studios*
Danger Mouse (Brian Burton)
Jack White
Max Martin

Breakthrough Producer of the Year *sponsored by Focusrite*
Bruno Ellingham & Tim Goldsworthy
Charlie Andrew
Jake Gosling

Recording Engineer of the Year
Al O'Connell
Guy Massey
Haydn Bendall

International Recording Engineer of the Year *sponsored by KMR Audio*
Dave Sardy
Tchad Blake
Vance Powell

Breakthrough Engineer of the Year *sponsored by Genelec*
Charlie Hugall
Dan Austin
Lee Slater

Mix Engineer of the Year *sponsored by Solid State Logic*
Alan Moulder
Mark "Spike" Stent
Tom Elmhirst

Mastering Engineer of the Year *sponsored by Radial Engineering*
Mandy Parnell
Matt Colton
Ray Staff

Re-mixer of the Year *sponsored by Novation*
Jamie xx
Matthew Herbert
UNKLE

UK Album of the Year
Alt-J - An Awesome Wave
Ed Sheeran - +
Florence & The Machine - Ceremonials
Paloma Faith - Fall To Grace

UK Single Song Release of the Year
Ed Sheeran - Lego House
Paloma Faith - Picking Up The Pieces
Plan B - Ill Manors
The Maccabees - Pelican

Live Production of the Year *sponsored by Shure*
Adele Live at Royal Albert Hall 2011
Bon Iver at AIR Studios
The Olympics - Opening Ceremony

Studio of the Year *sponsored by Pro Sound News Europe*
Black Wookie Studios
RAK Studios
Snap! Studios
Sphere Studios

The A&R Award
Darcus Beese (Universal Island)
Korda Marshall (Infectious Music)
Richard Russell (XL Recordings)

The Unsung Hero Award
Mark Thompson (Funky Junk/Snap Studios)
Rebecca de la Porta & Paul Walmsley (Polydor/ Fiction A&R admin)
Sarah Liversedge (The Movement/BDI)

Tickets are available now priced £135 + VAT (or £120 + VAT for Full Members of the MPG). Please contact natalia@mpgawards.com for a booking form.

www.mpgawards.com

platinum sponsor

sponsors

media partners

49th AES International Conference On Audio For Games

The Audio Engineering Society's 49th International Conference on Audio for Games will take place in London, UK from the 6-8 of next month. It promises an absolute wealth of informative, thought-provoking sessions, tutorials and workshops featuring many high-calibre guest presenters from around the globe.

Headlining the impressive line-up is Robin Rimbaud, aka 'Scanner', an artist, writer, plasticien sonore, and composer whose work "traverses the experimental terrain between sound, space, image and form, connecting a bewilderingly diverse array of genres – a partial list would include sound design, film scores, computer music, digital avant-garde, contemporary composition, large-scale multimedia performances, product design, architecture, fashion design, rock music, and jazz."

Since 1991 he has been intensely active in sonic art, producing concerts, installations, and recordings. His albums *Mass Observation* (1994), *Delivery* (1997), and *The Garden is Full of Metal* (1998) have been hailed by critics as innovative and inspirational works of contemporary electronic music. He scored the hit musical comedy *Kirikou & Karaba* (2007), wrote *Europa 25* – an alternative National Anthem for Europe in 2005, premiered his six-hour show *Of Air and Ear* (2008) at the Royal Opera House in London, designed the sound for the new Philips *Wake-Up Light* (2009), and national cinema campaign for *Sprint USA* (2012), Chanel's *Fall-Winter* collection (2012), and music for the Olympic Ceremony in London in 2012.

Audio Media caught up with him in London, ahead of his keynote address entitled 'Inspiration From A Different Space':

AM: How do you feel about being asked to give an AES keynote?
RR: I'm thrilled actually. It's a risk but a positive one. I've been encouraged to shake things up a little bit so let's see where this will lead us all.

AM: How do you view the development of music, sound, and dialogue for games? Is it something that still has creatively interesting places to go?
RR: I would argue in many ways that today we are more visually literate than ever. When we are creating sound we are also watching sound. The advantage of tape in the past was that you had very few visual distractions, you never marvelled at a sequence of wave files on a screen, whereas today we can tend to stop listening. Having rarely ever played games I am nevertheless intrigued by the potential audiences one can reach with often very complex and abstract work, wild sonic visions that would otherwise never have been listened to independently…

Conference keynote speaker, Scanner.

"Uncertainty and fear are emotions we all try to avoid generally but they can force you to follow a fresh path, an untried but fresh narrative – a line that you might never have considered before."

Robin Rimbaud

AM: What can people just entering the creative industries learn from your career and artistic canon?
RR: I've been working on a comparatively independent level professionally for twenty years now, with no management, touring agent, or booking agent, and yet have maintained a constant flow, a hyper-active level of productions for all this time. Much of this comes from a personal energy and commitment, and the clear realisation which many try to ignore that there's basically only one person who can make anything happen, and that responsibility lies with yourself. I have rarely made decisions about projects based on budgets, relying more on a sensitivity and recognition of what I will enjoy. Indeed the element of joy is often bypassed by people in order to earn more, and one can then easily lose touch with the real reason for doing this.

AM: You have a fascinating and diverse history in audio/music. What kind of elements do you hope to draw from your rich experience to inform and stimulate attendees' thinking about how they approach their work and research?
RR: I'm drawn to working and creating in such a wide variety of fields by the exchange and interaction in these creative adventures, never quite knowing what path they may take. I suppose it would be called 'risk taking' in some ways, but I see it more as a positive precariousness, putting myself on the line, under pressure, and never resting on the past. Uncertainty and fear are emotions we all try to avoid generally but they can force you to follow a fresh path, an untried but fresh narrative – a line that you might never have considered before. I'm looking forward to sharing stories of success, of failure – but mostly of possibilities.

Conference Highlights

SESSION 1
Theoretical, Technical & Practical Frameworks for Interactive Mixing: A Moderated Panel Discussion

Speaker:
Rob Bridgett, Audio Director, Author & Founder of GameAudioMix.com

Rob Bridget: "For me, AES London is an unmissable opportunity to put together a focused panel on mixing, not only looking at the amazing technical advancements of the last year or two (HDR, Wwise, fmod studio), but how this technology enables us more than ever to build a big-picture approach to the mix that involves pushing and pulling focus on narrative and game-play elements. In today's production environment, whether it's mobile or console, mixing is increasingly becoming embedded into the very concept of sound design itself, and by extension the two elements are often used in tandem to solve the same problems. The session panel, which includes both film and game industry veterans, aims to stir together a lot of different perspectives, from technical through artistic to logistical production challenges such as consistency and planning."

In The Chair

Michael Kelly – Senior Engineer with Sony Computer Entertainment Europe, and active AES full member since 1998 – is the Chairman for the AES 49th conference. He is keen to make this event one that engages to games audio community. "This isn't three days of sitting listening to lectures, it's a chance to participate and look to the future," he says. *Audio Media* spoke with him about the conference:

AM: Why is the AES involved in video games?
"The AES is all about Audio Engineering, from recording to perception to hardcore DSP. Games is a unique application area impacted by almost every field of Audio Engineering. As co-chair of the AES technical committee on audio for games, I see that one of our roles is ensuring that leading academics and technology providers remain up-to-date with the needs of games and provide the right ways for my colleagues in games to draw from this expert pool of knowledge."

AM: What has feedback been like from previous years?
"The reaction has been overwhelmingly great and that's the reason we're doing a third. The lead programmer of a well known series of first-person shooters summed it up quite well in a private email to me, "I didn't know what to expect when I decided to try to come to the conference. What happened was far more positive than any of my expectations though. I already have new features implemented based on conversations I had during the conference, and I have a bunch of ideas that I'm looking for time to try out. Hopefully someone out there is doing the same with material I presented."

AM: Overall objectives?
"Our primary goal is to get people talking – we wanted a 50/50 mix of academia and industry so that we could get people to share ideas. We always aim to offer in-depth detail in our talks and then provide enough time for people to discuss the nitty gritty over lunch or a beer later (the pub-social always goes down well)."

AM: Main focus?
"Our focus is always on the technical side of game audio, though we always throw in a bit of creative discussion and one-or-two game break-downs to make sure we keep everything in context and remember that we are not talking tech for tech's sake. In 2009 it was all about horse-power and how to begin

exploiting it – this time round it's about innovation, and we're drawing in as much content as we can from evolutions in areas like web-audio (where we're beginning to see triple-A style audio engines) and outside of games."

AM: Takeaway?
"I'd like to propose that every attendee will take at least one thing away from a conversation or presentation that will significantly change the way they think about their work... Hopefully several!"

Conference Highlights (cont).

SESSION 2
The Future Of Game Audio – A Retrospective – Adele Cutting, Director, Soundcuts

Adele Cutting: "I'm delighted to return to the AES conference for a re-run of my 2009 panel in which we'll revisit the predictions the panel made then – and then look at what tomorrow's focus might be... Our previous thoughts were informed by AAA titles, but the UK games industry now has many smaller teams working on iOS, download and mobile platforms with lower budgets and shorter development cycles. What does this mean for game audio and what advancements are needed…?"

And there's more....

***Crossing The Streams* – Scott Selfon, Microsoft**
What happens when we step beyond audio as a reactive force, and instead inject audio into the title's game design? Selfon will show and discuss specific examples from a number of titles where audio has moved beyond the "eventàwave file" archetype.

***How Sound Effects Realities: Enhancing Narrative With Audio* – Stephan Schütze, Sound Librarian**
Schütze will introduce a range of concepts that deal with how people think when they listen, and how creative teams can utilise the emotional triggers and instinctual behaviour that sound exposes in a gaming audience.

***A (Fairly) Brief History of 3-D Audio in Games* – Martin Walsh, DTS**
Walsh will present a technical overview of how we hear and why we care about 3D audio in games. From a history of the use of 3D audio in games to techniques used in today's latest first person shooters, and on to the future...

***Measuring Loudness in Interactive Entertainment* – Garry Taylor, Sony Computer Entertainment Europe**
Recently, Sony's Audio Standards Working Group (ASWG) released loudness recommendations for their first party titles. Taylor will look at the work of the ASWG, its first loudness paper and how its titles are measured and tested at Quality Assurance.

***Emerging Web Audio API* – Olivier Thereaux, W3C Audio Chair; Jory Prum, HTML5 Audio**
Olivier Thereaux will give an interactive overview of the upcoming standards for audio on the web: the web audio API for audio processing and synthesis in the browser, and the web MIDI API.

Planes, Trains & Automobiles: Creating & implementing vehicle sound systems for games – Mike Caviezel, Microsoft
Caviezel will discuss some of the basic Vehicle Audio design concepts commonly found in games today. We'll talk about system design, recording & sound design methodology, and various implementation techniques and tricks for making Vehicles sound great in games.

And Even More...

Can Interactive Procedural Audio Affect The Motorical Behaviour Of Players In Computer Games With Motion Controllers – Niels Bøttcher

Preliminary Investigation of Self-reported Emotional Responses to Approaching and Receding Footstep Sounds in a Virtual Reality Context – Erik Sikström, Niels Christian Nilsson, Rolf Nordahl And Stefania Serafin.

Auditory Feedback To Improve Navigation In A Maze Game – Kevin Dahlstrøm, Nicolai Gajhede, Søren K. Jacobsen, Nicklas S. Jakobsen, Søren Lang, Magnus L. Rasmussen, Erik Sikstrom and Stefania Serafin.

Integrating Custom 3D Audio Rendering Into Game Sound Engines – Fritz Menzer

The Future of Adaptive Game Music: The Continuing Evolution of Dynamic Music Systems in Video Games – David M. Young.

Virtual Sound Source Positioning by Differential Head Related Transfer Function – Dominik Štorek)

A Framework For The Development Of Accurate Acoustic Calculations For Games – Panagiotis Charalampous, PANOS ECONOMOU Lecture.

NB At the time of writing, the session programme and speaker list is not finalised.

For more information go to www.audioforgames.net

Radio Of Tomorrow

With the coming of 2013 one of the most venerable of British broadcast institutions pushes on into its 91st year. BBC Radio celebrated 90 years of transmissions on 14 November 2012 with a live broadcast of Simon Mayo's Radio 2 Drivetime show from the Science Museum in London, where an exhibition of equipment from over the years is on display.

The programme debuted 2LO Calling, the three-minute collage of music and speech clips created by Damon Albarn to mark the first BBC radio broadcast. The piece is named after the call sign of the London Station originally established by the Marconi Company in May 1922. It was taken over by the then British Broadcasting Company six months later. The first programme was the news, read by Arthur Burrows, who gave two readings: one at regular speed, the other more slowly.

As well as excerpts from archive recordings, Albarn included snippets of people today talking about what life might be like 90 years from now. None of those featured mentioned what they thought radio might be like in 2103. There are already changes in how people listen to radio, thanks to the Radioplayer, smartphones, and computers of all types, so more intriguing is what the radio studio or station of the future will be like.

"In general many of the changes seen today are ergonomic or aesthetic. A major consideration now is visualisation – or what used to be called webcams."

Kevin Hilton

ips Institute of Professional Sound

"Radio Ga-Ga"

Annual Audio Training Weekend
9th & 10th Feb 2013 at NFTS Beaconsfield

Everything you need to know about RF …and a little bit more.

Learn all about radio mics, IEM's, comms & links, spectrum planning and how it all fits together.

To book tickets for the IPS Training Weekend visit

www.ips.org.uk

The training weekend is open to all,
£180 (incl VAT) for members
£300 (incl VAT) for non members
Discounts available for students, see website for details.

The IPS – Providing training for sound professionals

Future Visioning

For the time being, the future radio studio as a physical entity will not change dramatically. New facilities for the BBC at Broadcasting House and MediaCityUK and those of commercial networks Heart and Capital resemble their predecessors. The most striking exception is the glass pod design for voice booths used in the office areas of the BBC World Service.

In general many of the changes seen today are ergonomic or aesthetic. A major consideration now is visualisation – or what used to be called webcams. Radio broadcasters realise their stations have to be on all devices that can receive transmissions. This means smartphones, computers, and tablets, as well as conventional radios. And while no one wants to change the fundamental nature of radio by turning it into cheap television, having some kind of visual aspect – graphics, text, social media, and live video of the studio – is seen as a way to appeal to a new, younger generation of listeners (although as they are not just listening any more a different word is needed to describe the audience).

Like many other broadcasters the BBC and Global Radio (owner of Heart and Capital) have installed video systems, with a minimum of three cameras controlled by vision switchers, augmented by lighting rigs to make sure that everything is attractively lit and can be seen clearly.

Technological Moves

On the distribution and networking side IP has been making inroads for a while, but the next big leap will be relying completely on this technology and moving away from rack rooms and base band audio. The BBC will start that process this year in a major reorganisation and updating of its local radio stations.

During 2012 the BBC tested ViLOR (Virtualised Local Radio) at Radio Northampton, and plans to have four stations – Northampton, Essex, Suffolk, and Three Counties – moved over to IP audio and distribution by the end of this year. Many of the 40 BBC local radio stations are using equipment that is more than 30 years old, and while the broadcaster realises the need to modernise, this side of its operations is bound by tight budgets.

ViLOR was conceived to maintain the local nature of each station – with its own newsroom and presentation – but reduce the cost of installation. The project was instigated by Geoff Woolf, Technology Development Manager for BBC English regions. Outlining ViLOR during the Radio Academy TechCon in Salford last November, Woolf said the aim was to remove base band audio and patch bays and racks, leaving only the mics, loudspeakers, mixing surface, and interface to the play-out system in the studio. All audio in ViLOR is carried over IP, with the processing and machine functions in a central facility elsewhere.

The test system at BBC Radio Northampton comprised Axia digital consoles with Glensound Electronics interfaces, Scisys (VCS) automation, and Broadcast Bionic's PhoneBOX call handling system. The distribution infrastructure was provided by Atos, the BBC's IT network partner, with processing and distribution at the BBC Mailbox centre in Birmingham.

The go-ahead has been given to roll ViLOR out at 38 BBC local radio stations (excluding London and Manchester/Salford, which have already been upgraded). The aim is to complete installation at all sites by 2017.

As with much technology, the basic idea is not new. Engineers at commercial radio group GWR (now absorbed into Global) were working on a fully IP distribution network around ten years ago. While the necessary technologies – digital consoles as well as IP equipment – were available then, they were not as well developed or as affordable as they are today.

The implication of ViLOR is that a presenter is not tied to a physical studio at the radio station but can broadcast from anywhere there is an IP connection. That could spell the end for the traditional sound booth, particularly if, as one delegate at TechCon observed, noise-cancelling technology improves to the point where acoustic treatment is no longer a consideration.

Arthur Burrows would see similarities between today's radio studios and where he read the news for the BBC/2LO over 90 years ago. By 2103 all that might be the same is the microphone, and that will certainly be radically different to the big lozenge-like contraption he spoke into all that time ago.

NUAGE

Yamaha & Steinberg

Post. Dramatically redefined.

NUAGE - The perfect mix of creativity and productivity

Uniting the elements of your post-production workflow into a seamless experience, NUAGE combines dedicated Yamaha control and interface hardware with Steinberg's Nuendo 6 DAW software in a flexible modular system that offers unprecedented creativity, productivity and audio quality.

With cutting edge technology from two of the audio industry's heaviest hitters, NUAGE brings top-class hardware and software together in perfect balance - redefining what is possible in audio post-production.

For more information please visit www.yamahacommercialaudio.com

CONNECT WITH EXPERIENCE
YAMAHACOMMERCIALAUDIO.COM

YAMAHA commercial audio

RECORDING STUDIO

Les Studios La Fabrique

Les Studios la Fabrique is a fully residential recording facility set in a former mill complex – built in the Eighteenth century – in landscaped gardens on the outskirts of the delightful town of Saint Remy le Provence.

The operation is headed by Herve Le Guil, a noted sound engineer who for many years ran Gimmick Recording Studios near Paris. Twelve years ago, with his family and a talented back-up team, he moved south to embark on what is a seriously ambitious project.

Working closely with Herve is his son Maxime whose CV includes a recent spell at Electric Lady Studios in New York, and who is now managing La Fabrique Paris. "We work as a team," affirms Le Guil senior. "The first phase of development here is complete, but there's so much more in the pipeline and on the proverbial drawing board." Pointing to all the various outbuildings – and to the vast main house and gardens, he adds, "I think potential is the appropriate word."

Herve and Maxime Le Guil.

The place was – and still is – home to the Foundation Armand Panigel, a collection of some 200,000 vinyl recordings, 78ppm discs, 40,000 movies, and 160,000 books on music and cinema compiled by the late musicologist, critic, and personality Armand Panigel. The collections, many lovingly restored, line the walls, adding greatly to the atmosphere of the place. It is one of Europe's most significant classical music archives.

"I've been in this business for many years now. You always want to change your equipment, to improve the set-up. We originally installed a Harrison Ten – from Mike Oldfield's studio, but when the chance arose to purchase the Neve it was no contest. This console is just the one. It has everything you want in a console – good sound, easy to use, reliable, and accurate. I remember when this console was released it was immediately legendary. The sound of the Neve suits the acoustics of this place."

In fact, the console came from Plus XXX Studios, now home to La Fabrique Paris. "Plus XXX, of course, was one of the best-known and most successful studios in Paris for many years," observes Herve. "But it fell victim to the changing economic climate and developments in recording and music making practice. And when it went bankrupt, we bought three desks from the bank – the big Neve, SSL 4000, and a Neve V51.

Freelance engineer and producer Patrick Jauneaud works regularly at La Fabrique. He worked from 77 to 1980 in Superbear Studios with Kate Bush, Pink Floyd, Elton John, Queen, Alan Parsons, and others, and has seen more than a few studios come and go since.

"Superbear was of another period," says Jauneaud. "A conventional Eastlake studio, extremely nice but much, much smaller than here. The control room was half this size. It was an English studio in the south of France, everyone there was English, even the cook. It was also a time when many top bands wanted to record outside the UK for many reasons.

"When I think of it now, everything was so conventional, it was technically solid but nothing compared to this place. I have worked in many studios since. In France there have been one or two nice residential studios. We know business is difficult right now, but here is something [at La Fabrique] that is completely different. The way that Herve is approaching it is special. Most people working in studios are passionate about their work, but most times the business element overtakes the passion element. Here it is the opposite. And it's transforming month after month. If you feel good about a place, that comes through on the recordings."

www.studioslafabrique.com

FACILITY/EDUCATION

Mixing It In Marseilles

The Mix With The Masters programme offers an opportunity for recording and mixing engineers to come and work closely with leading record producers, engineers, and mixers and improve their skills in music production. Over a week, a series of discussions and workshops are held ranging from production and mixing techniques to career advice.

Each one-week seminar includes, among other activities, a series of discussions about production techniques, mental approach toward mixing, career advice, workshops during which the guest speaker tracks a band, mixes in front of the attendees, mixes with the different participants, and gives feedback on their own work.

The programme is held in the residential recording Studio La Fabrique, in Saint-Rémy de Provence (Southern France). The studio is built within one of the most impressive classical music record collections, and the facility features state-of-the-art equipment and esoteric acoustic spaces.

The space dedicated to recording totals more than 600sq.m, with various size rooms, volumes, and acoustics from 'very reverberating' through to 'dead', with some rooms with high ceilings (12m in the dark room). The sunlight-filled control room measures an impressive 100sq.m, and features controlled acoustics. The centre-piece is a Neve 88 R in a 72-channel configuration.

The Library is the main live recording area. Entirely made of wood and glass, and approximately 150sq.m, the space is filled with sunlight and has a natural sounding acoustic. Musicians are surrounded by over 200,000 vinyl records from the Foundation Armand Panigel, one of Europe's biggest classical music collections. It provides artists with a peaceful and highly creative atmosphere.

Since 2010, many great engineers and producers have been conducting seminars at Studio La Fabrique, including Andy Wallace, Michael Brauer, David Kahne, Chris Lord-Alge, Tony Maserati, Tchad Blake, Joe Chiccarelli, Manny Marroquin, Eddie Kramer, Al Schmitt, Tom Elmhirst, Andrew Scheps, and Peter Katis.

The 2013 schedule includes Tchad Blake (March 25-31), Al Schmitt (May 14-20), Jimmy Douglas (May 2-28), Chris Lord-Algie (July 25-31), Michael Brauer (August 3-9), Manny Marroquin (August 11-17), Tony Maserati (September 2-8), and Joe Chiccarelli (September 17-23).

www.mixwiththemasters.com

DISTRIBUTOR

SoundCo

Renkus-Heinz recently announced the appointment of a new distributor for France. The American loudspeaker manufacturer has signed an agreement with leading French distribution company SoundCo, and from now on will handle the distribution of Renkus-Heinz products for the French market. It will also cover the North Africa countries Algeria, Morocco, and Tunisia, on a non-exclusive basis.

With offices in the Paris suburb and a sales agent team, SoundCo offers its customers support throughout the country.

The company works in all of the entertainment technology sectors including the live sound/PA rental market, the MI market (including both online and retail outlets), installation and system integration companies and the broadcast industry, and more besides.

Another string to the company's bow is the direct import and distribution of pro audio products. SoundCo is the exclusive distributor for France for Lewitt Microphones GmbH, ESI Audio GmbH, M Pro Audio, Violet Audio, and DVK Technologies.

SoundCo's key people are Martin Broucqsault, who holds a postgraduate degree in Marketing Management from top business school ESDES Lyon, and a former sales agent for SCV Audio (Harman Pro French distributor) and EVI Audio, dealing with Electro-Voice, Dynacord, Midas, and Klark-Teknik. He has strong experience with PA and rental companies, and his combined skills provide marketing and sales strategies for the different markets of the pro audio business.

Jérôme Hardy holds a graduate degree in Electronics Applications. A former sales agent for CINECO, the French distributor for Shure, APEX, Symetrix, Celestion and QSC, and SCV Audio, French distributor for the Harman Pro Group with brands JBL, Crown, Soundcraft, AKG, BSS, DBX and Native Instrument, Merging, NTI and more, and was Product Manager for Audio-Technica.

Håkan Sjöö, Renkus-Heinz European Sales Manager, Comments, "We are really delighted to have secured the services of SoundCo. We believe their deep knowledge of the French market, their enthusiasm and their broad customer base will strengthen the Renkus-Heinz brand in the country and enable us to grow into new markets."

DISTRIBUTOR

Sennheiser France

Innovason has confirmed the signing of an important partnership with Sennheiser France for the distribution of all Innovason products throughout France. Announced at JTSE 2012 in Paris, the move further strengthens Sennheiser France's presence in the live digital technologies market, taking advantage of the existing synergies between Innovason digital consoles and Sennheiser's digital microphones by Neumann.

In order to fully optimise the opportunities presented by this new partnership, Sennheiser France has taken on Axel Brisard, an expert in digital audio mixing and sound capture. Brisard, who worked as a sound engineer at Radio France for many years, is fully versed in the use of Sennheiser Group digital microphones with Innovason's Eclipse consoles, currently the only consoles on the market to offer complete control of all Sennheiser and Neumann digital microphone parameters from the control surface.

"Our goal is to offer comprehensive solutions for sound capture/recording and mixing for the live sound market, just as we have been doing with great success for many years in the corporate AV market," declared Alain Richer, Director of the Pro Audio division at Sennheiser France. "The move is part of our Premium strategy within the Sennheiser Group that seeks to provide our customers with complete qualitative solutions backed up with first class technical support."

International Sales Director for Innovason, Marcel Babazadeh adds, "We have been searching for the right partner in France for some time. With its heritage as a French brand, the French market remains key to Innovason, so it was extremely important to find the right partner for this important territory."

LIVE SOUND

Jazz à Vannes

2012 was a busy year for the Uniline Solution rental network, with events and festivals of all types and sizes taking place throughout Europe. One such festival was Jazz à Vannes, now in its 33rd year and an absolute must on the European jazz circuit. The line up this year featured the likes of Marcus Miller, Malia, the Kyle Eastwood Band, the Jacky Terrason Trio, and many more.

Rental company and jazz specialists, Studio Sextan, were in charge of the audio requirements for the festival. They supplied an APG Uniline system as the PA for the main stage in the Jardins de Limur, plus DX Series stage monitor system and Innovason Sy48 consoles at FoH and monitors.

For Studio Sextan's Vincent Mahey, Jazz à Vannes is an annual fixture. "I've been doing this festival for 23 years now," he remarked. "On the one hand it's very familiar; on the other, it's exciting to witness and to be a part of, not least amongst the sound systems we have supplied, to make the festival what it is today."

Mahey recalled that this is now the fifth year that Studio Sextan has supplied an APG system, the last three of which have been with Uniline. The last two years have also seen a DX Series stage monitor system. "Every year we make a few minor adjustments to the configuration, but we've basically hit on the right formula now," said Mahey. "As I've said time and time again, Uniline has proved to be an excellent system for us. I like the natural, transparent sound and the complete lack of distortion, even when driven hard. Frequency response and directivity control are both excellent and the modularity of the system makes it easy to design a configuration that will achieve smooth and even coverage throughout the listening area, whatever its shape and size."

EXHIBITION/CONVENTION

SIEL 213

SIEL 2013 is scheduled for February 4-6, 2013, at the Grande Halle de la Villette, Paris, France.

SIEL is a showcase for products, but it is also the coming together of an entire profession in all its business sectors – audio, lighting, video, special effects, and stage equipment.

The event features 11 demonstration workshops, four classrooms for training sessions, and nine lighting showrooms for checking out lighting effects. Confirmed exhibitors include Chromlech, Soundcraft, JBL, Sennheiser, Yamaha, Robert Juliat, Clay Paky, and more.

For the second consecutive year, innovations will be rewarded with an 'Etoile du Siel' prize by a jury of experts.

A friendly, convivial gathering is promised, and the opportunity to meet and talk in a setting that is unanimously popular.
www.siel-expo.com

Life of Pi

Life Of Pi is a singular book that has spawned a singular film. The story, on the face of it, is one of an Indian boy named Pi who, after a storm wrecks the ship he is travelling on with his family, finds himself cast adrift on a small life boat with only wildlife – including a Bengal Tiger (named Richard Parker) – for company. It is much more than that though. An older Pi tells the story as a parable, an examination of the nature of religion, and as an observation on belief. The action is sometimes alarming – with one of the most dynamic and dramatic storm experiences I have watched and listened to – and sometimes ethereal, or minimal and incredibly detailed. Richard Parker himself has an impressive screen presence, thanks to both the stunning visuals (almost entirely CGI), and the equally impressive sounds he makes (almost entirely real). The music too, in both composition and mix, is stunning. It really adds to the scene and becomes multiple effects in itself.

All of this was aided, in the screening I watched, by the Dolby Atmos mix. It's one of a handful of films being given an early release with the new sound format. The initial final mix was done in 7.1 for the main release prints, and then another version was done in Atmos for release to the early adopting theatres.

Impressions from the screening were very positive. Perhaps surprisingly, the film makes most obvious and effective use of Atmos in the music score, but then the film does not have big action scenes queueing for attention, so maybe it was inevitable. There are a few points where effects take the spotlight, especially in the first storm scene and in the 'flying fish scene' where the audience is almost overwhelmed with a massive school of flying fish swarming around Pi's boat.

I managed to speak with Sound Supervisor Eugene Gearty (Phil Stockton was also a Sound Supervisor on the film), and Re-Recording Mixers Ron Bartlett (dialogue/effects) and Doug Hemphill (music).

Paul Mac: Ang Lee is a Director with a fantastic reputation. Is he very sound-savvy?

"One of the big challenges was the second storm, where Pi has an epiphany. That scene was about the music, the music was telling the story, it's the emotion..."

Doug Hemphill, Re-Recording Mixer

Doug Hemphill: Very... he's way beyond sound savvy… He has an incredible aesthetic for sound.

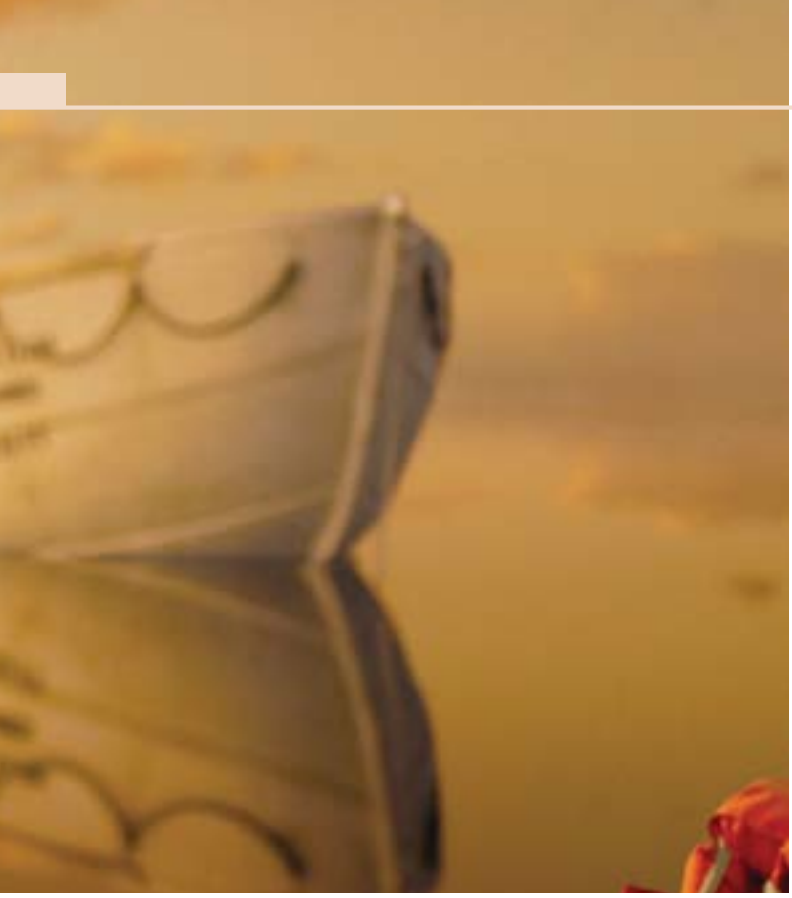
Ang inspired us constantly with what he was trying to do – where he wanted to have a sense of solitude out in the ocean on a lifeboat, and where the world sort of contracts and expands. It's all about focus. I tell people who aren't in our industry 'you know how a cameraman focuses, so they determine what you should be looking at? Well, we do the same with sound... We decide when to become a little bit more internal, and take sound away, or to bring life back into the world."

PM: One of the most striking audio scenes is the massive storm at the start – incredibly dynamic but maintains its impact over quite a period of time.

DH: We were very conscious of what we were trying to do. It's visually a big, stunning sequence, but it has to fit within the film, and it has to be about Pi... Even though it's a big storm, we held the throttle back on that and it comes and goes, and breathes, and has moments where it settles down a little bit. It just is a feel thing as we went through; we didn't want to be overbearing and make the storm more important than Pi and what he was experiencing – losing his family... it's terrifying. A fair amount of craft went into that.

Eugene Gearty: Ang is very much a director of nature at this point, as you can imagine after movies like *Crouching Tiger, Ice Storm,* and *Brokeback Mountain.* A lot of the sound work that I've done for those movies is heavily focused on nature. He's a huge proponent of mother nature and the idea that even though you think you will win, she holds all the cards. We wanted that storm to be very impactful and very dynamic.

It was hard to do because Ang kept on asking for elements, and rightfully so... Doug did a phenomenal job of weaving the more broadband sounds of rain and wind, and shaping that so you can have some dynamics and can hear the little discrete elements within. But Ang... wanted so much rain. He kept on saying 'I want to feel it, I want to feel the rain'. We got it, but it was a great deal of effort



and work. As sound people our first instinct would be, 'okay, but it really eats up more opportunities to do more interesting things,' But he really did want that to be big.

You have to understand that it is difficult to maintain the energy level... I was struggling the entire time to come up with interesting, dynamic stuff, to move the story forward, to say 'come-on, come-on, let's go...' I think we achieved that. It was set up with lulls within the storm... so you take a breath and look at the ship and see what is going on.

DH: If he looks at the ship in a long shot we settle down because it's like you frame a character's thoughts for a moment with the sound. When you take things down just for a moment – he might be looking at that ship sinking – you tell the audience that this is what you're thinking – it's in your mind. You tune out other things when you think about something sometimes. You can do that with sound.

...There were times with Ang when he would say, 'he's gone into the water now, I want to hear the surface of the water and not the storm above' – little subtle things like that.

PM: The sound of Richard Parker is pretty amazing. Enough to make you jump on its own.

EG: Yeah – the tiger still makes me jump even though I know it's coming. None of those (visual) tigers are real, that you saw, but we had some really good 48k 24-bit recordings of tigers that I recorded... When you hear, at 106dB, perfectly clean 24-bit tiger roar about three feet from his throat, your hair stands up.

It's not a sound effect. It doesn't have optical noise on it, it's not distorted. It's almost like hearing a train pass by in real life. If you record that really well it's quite convincing that there's this hulking bit of steel passing by. And I really feel that we did that with the Richard Parker.

I'm also very proud that we gave him a personality – a character in this movie, vocally, that matched him.

I guess had it been an animated movie it might have been a little easier, but here you're trying to sell the idea that this is a real tiger when in 99 percent of the shots it's not. Also, in no shot in the entire movie is there any tiger sound from the actual animal on screen – not one.

Atmos In Practise

PM: Dolby Atmos is still in its infancy, with very much prototype mix tools. How far did you take the use of objects in Atmos?

DH: Luckily Ted Gagliano, who's the President of Post here at Fox, was really supportive. We had what we needed, and more.

EG: We had about a week on the dub stage to separate out our pre-dubs for the Atmos mix... So, instead of just working off our effects, Foley, and background stems we would separate out the individual pre-dubs that represented that stem and re-print them separately.

The Atmos came out pretty well, I thought. I was sceptical initially of the process and I'm still not completely sold on it, but that said we worked very hard and used it – in fact, ironically – more for music than for effects.

"Mychael Danna and Ron Bartlett spent a lot of time playing with the format to give the music a more dynamic shape than would be normally done... In fact – if I may say – treating it conceptually like effects, putting something over there or moving something around, whether that be a string pad or a harp glissando, or an ethnic instrument. They took it out of the left-right stereo image and started to play with it in much more of a 3D image.... And wonderfully so, I thought.

DH: We came up with a mission statement that night with Ang where we all got together and listened to Atmos, and it was pretty straightforward. If Atmos serves the film and the scene in a particular way, we use it. If it doesn't, we don't. I know that sounds really basic, but we consciously said that the Atmos mix would be about the story and the film, and not about Atmos.

PM: The music is much more than just a soundtrack. It interacts with the film a lot more than I've seen in many other films.

Ron Bartlett: Yes, it really was the heart and soul of that film. It helped tell the story well in an integral way.

Atmos gave us the latitude to go even further. We made a great mix in 7.1. We used the mid surrounds a lot, pulling elements back into the room, but Atmos has taken it to a whole other level... The overheads, specific speakers... it just gave us a lot more room to go further than the 7.1 format.

At first I was a little sceptical. We'd already made a very wide mix and it was really nice. so we were all very happy with the 7.1. Then we started to experiment with Atmos, what works, what doesn't work. As we started to put things more in the ceiling, it was kind of making it more – not mono, but feel not as wide as the 7.1 – so we started to back off...

But then when we really started to say, 'okay, I can pull this element out, and put that element over here and really open it up more', then it became very apparent what you could do with it and how far you could take it, and that's when it became very creative and we got a lot more movement and space.

A lot of us felt that Atmos was going to be great for panning things, like maybe panning a jet going by, through the overheads, and that is true. Like our flying fish scene – that really lent itself to Atmos as well. But I was surprised how much we could do with the music and where it could take us.

We tried to use Atmos in a very tasteful way that you could say 'okay, this is something that is story driven'. Even so I was a little conservative on it, in our first pass in Atmos. When Mychael, the composer, came to listen... He really pushed me to go even further. He would ask for certain things, and I would say 'well I'm kind of doing that now, but let me just give you a little more and be a little more dramatic with it', and he just ate that up – he loved it. After we finished, he said that he didn't want to hear the film in any other format.

EG: We were extremely pleased with the shape and width and motion of our 7.1 mix. Atmos enhanced that, there's no question. If we had done our movie in, say, stereo and went to Atmos it would have been dramatic, but the jump from 7.1 to Atmos wasn't as dramatic as you might think; but maybe it shouldn't be. That was our intention. Your eyes are still focused forward no matter what. Your head is still looking towards the screen. Your ears want to hear from the front and the sides, but not to the point of turning your head unless it cinematically makes sense, or makes sense for the script.

The Arches

By Jo Fletcher-Cross

Twenty-one years after the cavernous space beneath Glasgow's Central Station was opened up as The Arches, it has become one of Europe's leading cultural venues, hosting some of the UK's biggest club nights and a wide variety of live music, plus new theatre and visual art exhibitions. The Arches is a not-for-profit organisation: the clubbing, bar, cafe, live music, and corporate hospitality revenue is reinvested in the arts programme – this accounts for 88% of the venue's funding. Its aim is to 'break down entrenched notions of what an arts venue should be'. Since 2008, Jackie Wylie has been Artistic Director. She has increased The Arches' international work, expanded their key festivals and programmed work by emerging artists in Scotland and beyond – carrying on and growing the legacy fostered by former Artistic Director and founder of the venue, Andy Arnold.

I went to The Arches to meet Technical Manager Robert Watson and General Technician Shaun Kerr. Watson has been with Arches for fourteen years, working the progression from technician, to Assistant Technical Manager, to Technical Manager. "My job used to be on the floor, doing what Shaun does, enjoying it, having a great time – one of the best parts of that job is that there's a bit of creativity, there's a bit of brainwork, there's a bit of physical work, there's a bit of everything, and obviously when you're cross-discipline it makes it even better," he explained. "At the moment I'm just captain of a desk, flying a desk and a computer and dealing with all the issues of the day." Shaun Kerr has been at The Arches for five years, after working for various other theatres and events companies. He is a multi-skilled technician, but specialises in sound for gigs, and lighting for clubs (and a "bit of everything for theatre events.")

To get in, you must first go under the huge, dark glass-walled railway bridge of Central Station – otherwise known as the Hielanman's Umbrella – and there, under the rumbling trains, is the entrance to The Arches. Once inside, you can't help but be struck by the space, all exposed brick and coloured lights, the promise of exciting events tucked away in secret tunnels and chiselled-out rooms luring you further in.

"What I've always said is our greatest strength is our greatest weakness as well, and that's our flexibility," said Watson. "Ten years ago, we had loads of really good promenade shows, things like *Inferno* (directed by Andy Arnold) and *Heart of Darkness* (by Factional Theatre), that used the entire venue. Obviously, since then, the economy's kicked in a little bit more and its become a bit more...not money orientated, but we do have to make sure we can survive. We have to make sure that the commercial side of the venue is enough to sustain the artistic side – which is The Arches model and that's the way it's always been." Fortunately, economic wobbles haven't stopped the production of some original and unusual theatre. "We've pretty much used every single nook and cranny in the building now, we've had shows in the toilets, we've had shows in the derelict parts of the basement, everywhere. Technically, that's the beauty and the challenge of it; having worked previously in a traditional proscenium arch theatre, you're limited in what you can do, and I think you generally find that people become quite staid and immovable in terms of how they want that to be used." Not much chance of that happening at The Arches: the 'stages' move about, the bars are moved from place to place. You don't know where the next happening might be happening. "It gives us more work to do, but the nature of the building, and the events that we produce, is what keeps it interesting. You can be working on a theatre show one day, you can be working on a club night the next."

"We've pretty much used every single nook and cranny in the building now, we've had shows in the toilets, we've had shows in the derelict parts of the basement, everywhere."

Robert Watson, Technical Manager

Something Special

Here I feel I must declare an interest. I am Glaswegian, and I have been heavily involved with music and theatre my whole life. So I knew The Arches well when I was younger, and many of my formative experiences, particularly in theatre, took place there. What I didn't appreciate, however, what just how special it was. It wasn't until I moved away that I began to realise that not every city had a venue like The Arches. Even in London, there really wasn't anything quite like it. Sure, there were amazing theatre spaces, incredible club nights, fantastic cafes and bars, eclectic places to go and see gigs. But all of these things together, in one place, with exciting, visionary programming? A bit thin on the ground. I asked Robert Watson where he felt The >

KMR AUDIO

kmraudio.com

020 8445 2446

We carry the largest stocks of serious audio equipment in Europe. Our North London showroom is packed to the rafters with the best in outboard, microphones, consoles, convertors, DAW systems... and monitors.

If you want the broadest choice in high-end gear when considering your next purchase, call or email us to arrange a demo… at ours, or at yours.

KMR Audio Ltd - 1375 High Rd, London, N20 9LN. sales@kmraudio.com. Unrivalled demo facilities, support, advice & pricing. Open Monday to Friday, 10am to 6pm.

> Arches fit in as a venue. "That's a difficult one. I honestly feel as though we're unique. In all my time here, the one thing that I've always said is that nowhere else can produce what we produce. We don't always produce it to 100% but we'll try. We'll always try." This trailblazing approach does have its drawbacks. "Last year (2011), a few times we reached critical mass – and overstepped critical mass, if I'm being honest, in terms of programming the venues. Because you have to try it and see. It hit a point where some events were impacting on others. We've got a good system in place where we can sit down and discuss and debrief afterwards and say, 'right, ok, why did that not work?' We don't like to say no, but it does hit a point. If we say no, it's not because we don't want to do it, it's because we physically can't fit them in."

The venue current technical team consists of Watson, the Assistant Technical Manager, and a full time team of four. There is also a casual pool of around 20, made up of freelance professionals and a younger casual crew. "We try and mix it up between casuals and freelance staff, because it then shares the knowledge pool a wee bit more," said Watson. Which ties in rather nicely with the venue's reputation for encouraging new artists. The Arches has a year-round programme of opportunities including Artist in Residence programmes and two annual awards, Platform 18: New Directions and the Brick Award, as well as showcasing work from Scottish talent in Arches LIVE, an annual festival of 'brave new work'. "When I was doing my training here at The Arches, one of the best things that I enjoyed was that you could see a show develop, you could be with it at the beginning stages, and then that show would take off – it would get commissioned at the (Edinburgh Festival) Fringe or something like that, and you were then included as the original designer. That was a great thing, to have that opportunity," enthused Watson. "It's all about the development. I think if you're not developing and growing, then there's a problem, and that'll manifest itself in people being unhappy in their workplace." The nature of The Arches gives it an edge. "I think we can offer a better training here than a traditional proscenium arch theatre or a 'normal' gig venue, because there, that's all installed. The stage doesn't move, your dimmer rack doesn't move, your PA is generally a flown cluster and doesn't move – whereas here, it's almost like touring, you're seeing how it works from scratch."

Shaun Kerr, as a general technician, is right in the middle of all this. "We'll come in, say for a gig, at midday, and the whole process of getting the band in, sound checking, getting them out at around eleven or midnight, then we'll maybe do a turnaround for a club that'll run till three, four in the morning. Then back in the next day. Take it all down and build a theatre show." The tight turnarounds create a lot of pressure, and Kerr and Watson both agree that planning and organisation is key. "And troubleshooting – we have to do quite a lot of fault finding and troubleshooting," said Kerr. Even the best laid plans 'gang aft agley' as they (might) say here in Scotland, and there are times when things are still being plugged in as the audience comes in. "Five minutes before doors and you're still up on top of ladders," admitted Kerr. Though this has also been embraced as part of the unique nature of the venue.

"It's something that I didn't take in until quite recently," said Watson. "I was always of the original idea that you should keep them completely separate: if you're coming out of a theatre show then you shouldn't see anyone up a ladder. It was more recently that I thought, it's not a bad thing. People are interested in it. They're interested in seeing what else the venue is getting used for, and seeing it in action."

Kit For All Occasions

As you might expect from the diverse range of events taking place, there is a fairly wide range of gear kicking about. "We've got three full-range PA systems. Whenever you get a rider through from an artists, they'll either be L-Acoustics, Funktion One, or Martin Audio, so that's our three systems," explained Watson. As for desks, they have Midas in-house for FOH and monitor control, plus Allen & Heath control for clubs. "We made a conscious decision at the time to have quality gear from start to finish; in terms of processing it's XTA, DI boxes as much as possible Klark Technik. You are only as good as the weakest part of your link. The problem with this venue is that it's a brick archway. Traditionally, it worked really well for clubs – because you've got a really long transient between the bass, it gives the big bombastic sound, and it's not heavy metal music where a wash of six or seven notes in a second would just get lost, and it would sound really, really bad. Shaun's been part of the new regime, and we're looking to try and turn over what has sometimes been a bad impression of the venue and the venue sound. Because obviously everybody's got an opinion on sound."

Kerr explained that they have recently attempted to acoustically dampen The Arches using draping and hanging cloths. "It's been helping a lot with monitors onstage and trying to please artists."

This is a truly multifarious venue with a wide range of challenges and unique opportunities. "I think you've just got to respect the diverse range of events that happen," said Kerr. "You can't just be suited to one style, you've got gigs, clubs, theatre, and corporate all housed under these arches, so you've got to be flexible."

"Everyone's event is the most important thing to them, so you've got to give them that particular credence," adds Watson. "It's up to us within the confines of the building and the programme to give them what they are looking for."

www.thearches.co.uk

Try the Focusrite Red Series in your Lunchbox
If you are based in the UK and wish to experience the legendary Red mic preamp in your 500 Series Lunchbox, call 0845 894 0874 or e-mail red500uk@focusrite.com
Focusrite
www.focusrite.com

Perfectly Angled

The Pinnacle of Desktop Monitoring

From the handcrafted Dynaudio drivers to its beautiful exterior, DBM50 is born to perfectly reproduce your desktop mix and truly represents a revolutionary angle in desktop mixing.

Add the optional Volume Box for hands-on Master Volume control.

dynaudioprofessional.com

20th Anniversary
Dynaudio Studio Monitors

DYNAUDIO
Professional

Pictured: Thomas Lundt, TC Electronic (left); and Niklaus Kuehne, SRG SSR (middle); Florian Camerer, ORF (right).

The Loudness Summit 2012 Conference Report

By Mike Aiton

On December 7, 2012, at the Royal Institute Of British Architects (London), Loudness Summit Chairman Florian Camerer, Senior Sound Engineer at ORF, EBU P-Loud committee member, and the undisputed 'Big Daddy of Loudness' kick-started The Loudness Summit – a day's conference aiming to bring together leading industry players to analyse and discuss actual loudness implementation across production and delivery workflows.

The overriding messages of the day were that loudness is gaining speed, and when (not 'if') it is implemented all meters are going, apart from loudness and true peak... It might be goodbye to your quasi PPMs and other fancy-schmancy meters.

Here's a summary of some of the highlights of the summit….

Reference Level

Florian Camerer started proceedings with a quick ground-up sketch of where we currently are with loudness in the EBU, the all important '-23LUFs', and how loudness measurement should stop the loudness wars and the variable levels between programmes and commercials, giving us back dynamic programming again.

ITU R 1770-3 was ratified in march this year, where G10 (the gate of -10Lu below the un-gated LUFS) was defined. It is important to understand the gate threshold moves relative to the average loudness level so that a dynamic programme has to be altered less.

Camerer then explained the importance of true peak measurement and how it related to avoiding distortion from lack of headroom in the D to A convertor. Of additional importance, and I must confess new to me, was the importance of avoiding distortion in true peaks (by up to 6dB) when using bit rate reduced codecs.

Camerer then debunked a myth for me about the VU meter (I show my BBC heritage here..) and actually described it as having a reasonable resemblance to loudness. Shock horror!

"Very useful to hear experts debunk the mis-information..."

Eli Perl,
Senior Dubbing Mixer
Sky TV

When measuring loudness in EBU mode, the momentary reading is over 400 milliseconds (like a VU meter), the short term is over three seconds (no gate), and the integrated figure which you can start and stop and is the momentary figure integrated over time with the inclusion of the gate. Of note is that the short term figure is good for measuring speech and can be a handy guide for VT editors or non sound engineers to get a feel for speech levels.

Camerer then gave us a breakdown of the Loudness adoption across European countries: Germany and Austria have already adopted, Belgium is expected to adopt in Q1 2013, the Nordics should be on board sometime during 2013, in Spain it is currently passing through parliament on its way to becoming law, and it is expected that the UK will also follow some time during 2013.

There then followed a beautiful explanation of some Loudness issues, especially the 'All or Speech Debate' for loudness measurement. Camerer and the P-Loud group think the US use of Speech or All in ATSC 85 is wrong, as the use of speech as the anchor can lead to a lack of headroom, especially for loud dynamic films.

Camerer then outlined the 'cheating the gate' scenario where commercial mixers might raise the backgrounds of quiet adverts to just above the gate so that the backgrounds count towards the loudness measurement and therefore give a lower average, rather than not contributing to the average at all... Warning, you will be busted by the networks as this trick has been identified! Go stand at the back of the queue with the compressor cowboys!

To finish, Camerer wound up by outlining the definition of loudness range. It is NOT the peak to loudness measurement, but an average of range.

Standard Bearer

Next up on the block was Andy Mason, Senior BBC R&D Engineer who started with a plea for the correct use of terminology – measure loudness with LUFS not LKFS! Point duly noted. >

EVE AUDIO

BERLIN · GERMANY

THE NEXT STEP

FutureMusic
Technique and technology for making music

SC204

"[...] They have plenty of detail and the fact that the response is even – from low levels right up to their surprisingly punchy version of loud – means you could mix on them very happily. Factor in the price and you've got two speakers punching well above their weight. Roland Stenz certainly knows a thing or two about loudspeaker design."
Stuart Bruce, Future Music Magazine

MusicTech
The magazine for producers, engineers and recording musicians

SC205

"[...] Two things stand out from the off: nicely controlled, clear bass, and a remarkably open and deep sound stage. With natural acoustic recordings you get a real sense of the recording space."
Huw Price, MusicTech Magazine

AudioTechnology

SC205

"[...] I've had a pair of SC205s set up beside my usual Near fields and I've found them to be easy to listen to with a neutral tone that doesn't wear your ears out during long sessions...
Due to their size the SC205s will probably be best suited to home/project studios but they could also be used by professional studios in small rooms, as part of surround or mobile setups, or for music playback installations."
Mark Woods, AudioTechnology Magazine

NOVA DISTRIBUTION

www.nova-distribution.co.uk
sales@nova-distribution.co.uk
+44 (0)20 3589 2530

WWW.EVE-AUDIO.COM

Mason went through the latest standards developments. First, EBU R128 (-23LUFS gated ±1LU, with Max TP at -1dBTp… pay attention at the back). He then described EBU tech docs 3343 (broadly, how to make your programme) and 3344 (how to distribute it).

Mason then outlined the ATSCA85 standard, which is very similar but goes on to describe metadata and the infamous 'anchor element' (and whether it is speech or some other element). ATSCA85 uses -24LUFS ±2LU (because of the difference in anchor element that can occur) and it wants -2dBTp (to allow for coding errors). For short-form material the anchor element is always the full mix.

Pictured: Simon Tuft, BBC.

ITU-R BS1864 describes the international exchange standard for TV programmes and requires -24 LUFS (not gated) ±2LU with the anchor element as the full mix, or just dialogue (as long as it is accurately noted or described).

Mason then described the regulation status for the different areas: the BCAP code in the UK with its PPM 6 limit (and lower for commercials), the Calm Act (using A/85) in the USA, and various bodies and legislation around Europe (typically using R128).

Case Studies

Simon Tuft, Principal Technologist at the BBC, gave a fascinating talk about Intelligible Dialogue and The Wimbledon Experiment. He started by discussing the infamous Brian Cox BBC Science Series and the furore it caused regarding intelligible dialogue. He outlined some interesting general complaints data from the BBC:

- Background noise over dialogue caused 13% of complaints
- Music levels over dialogue caused 11% of complaints
- Fast speech caused 11% of complaints
- Muffled speech caused 14% of complaints
- Accents caused 19% of complaints

...And some very interesting facts about the viewing population in the UK:

- There are over 2 million hearing aid users in the UK, and over 14% of the population have hearing loss of some level.
- People with mild hearing impairment require at least 4-6dB of dialogue to background separation to discern speech.
- People with moderate hearing impairment require at least 7-9dB of dialogue to background separation to discern speech.
- People with severe hearing impairment require at least 18dB of dialogue to background separation to discern speech.
- Comfortable listening levels also vary considerably with age. A 20 year old will hear and discern dialogue at 55dB, whereas at 80 they would require a volume of 82dB!

Pictured: John Schorah, Nugen Audio (left); MC Patel.

At Wimbledon, the BBC conducted an experiment with Netmix technology that allowed the viewers the ability to balance the level of commentary versus FX at a quite high quality level of AAC encoded audio streams at 192 Kb/sec. Interestingly, of a sample of about 1,000 viewers, most thought the BBC level was about right, and of those who adjusted the mix, as many dipped the commentary as boosted it! This was a fascinating experiment and is a testament to the BBC that they are getting it right.

Additional Features

Other conference highlights for me included Camerer discussing Loudness in Cinema and how cinema is in a free-fall tailspin where the mixers are mixing louder to combat the way cinema chains are turning the replay level from dolby 7 to dolby 4 on playback – because of the loud mixes – giving at least -10dB (more than 75 percent reduction) in volume. Madness. One could suggest a pair of pliers to remove replay level adjustment in cinema chains?

One of my personal favourite presentations was from Thomas Lund, HD Development Manager from TC Electronic, who gave some very interesting insights, explanations, and demonstrations.

He gave a great explanation for the 3-5dB of headroom required by MP3 coding to avoid peak distortion, and the importance of listening to the S component (remember your theory here where A + B - 6dB = M and A - B - 6dB = S) after codec data reduction to hear any 'digital chirping' or 'birdies'.

Lund played an example of Steeley Dan with very fast time constant hard limiting versus the original to demonstrate that the senses have a latency of sensation of about 450 milliseconds (your startle reflex is about 75 milliseconds). The limited piece sounded odd, but it was hard to put my finger on what was up with it (not helped by the acoustics of playback). This gives rise to the use of 450 milliseconds as the momentary loudness time constant.

Lund also played various examples of Michael Jackson's *Beat It* mastered differently through the decade(s). The current one seemed to be less dynamic than white noise! Startling.

Lund was at pains (pun alert) to compliment good dynamic range use in broadcast, citing *Rule Britannia* mixed by SIS Live's Andy Payne (who incidentally trained me as a lad on my outside broadcast rotation at the BBC!).

He also noted that AC3 is not BS1770 compliant and that AC3 may distort on downmix, so limit at -3dBTp.

Fascinating stuff.

Felix Kruckels, Senior Product Engineer from Lawo AG, gave some great tips for operational practice in productions. Optimum speech rate in broadcast is about 100wpm (words per minute). Short term loudness has a better correlation to loudness for speech rather than momentary level, as that averages over five words per value, rather than the 0.7 words of the momentary value. So don't have a twitchy finger on your fader and chase momentary values! If your short term loudness is coming in too high, then turn up your monitoring to make you reduce it.

Final Thoughts

All in all it was a very informative day, though fairly exhausting to listen to so many speakers with so much information to impart. I felt that the subject might have been better served up in two separate half-day sessions and possibly with production/post production separated from infrastructure and transmission. One can get loudnessed-out!

One question does remain unanswered though... Who is going to buy all these second hand PPM meters?

Thanks are due to Jon Schorah of Loudness Summit sponsors Nugen Audio for the conference ticket. www.nugenaudio.com

audio for games

6-8th February 2013, London, UK

The third AES international conference dedicated to Audio for Games.

From the lab to the studio -
the cutting edge of audio for games from those who know.

Visit http://www.audioforgames.net for more information

Contact 49th_chair@aes.org with any queries

Follow @aesgames on Twitter for the latest updates

Registration is now open

Sponsored by

DOLBY binarisonori dts fmod GENELEC iZotope Fabric

Official Media Partner

AUDIOMEDIA

Audio Magic: Book Of Spells

By John Broomhall

'**Using the** PlayStation Eye camera and Move controller, Wonderbook brings books to life via augmented reality and motion controllers'. So reads Sony's Wonderbook blurb, neatly and succinctly defining an ingenious, engaging, technology-based experience. One might well add that it's compelling entertainment and brilliant fun for children of all ages – plus it encourages reading and celebrates books to boot.

However, the icing on the cake for Sony Computer Entertainment must surely be that the first Wonderbook game – *Book of Spells*, developed by its London Studios, is a collaboration with none less than Harry Potter creator, J.K. Rowling. *Book of Spells* allows players to master twenty spells from the world of Harry Potter and read new material from the Hogwarts Library.

Though you may be waving the microphone-like wireless Move controller over a book-like set of bound plastic sheets in front of a small camera in your living room, what you see on your screen is pure magic, for it appears you're waving that famous wand, and the book displays on screen as a beautiful two hundred-year-old tome which in many and various ways comes (awesomely animated) to life – from pop up theatre sets, to blazing fire balls, to flying dragons. What's not to like?

The fact this innovation was kept under wraps for so long is testament to a leak-proof organisation – an achievement all the more impressive when you consider J.K. Rowling's involvement and such a world-famous subject matter. Apparently getting one of the world's most noted authors in and out of meetings involved some serious 'cloak and dagger' action itself.

At the early stages of development, the music content and systems were prototyped using in-house composer talent to get the ball rolling, whilst Music Manager, Alastair Lindsay, started considering his options regarding eventual composer choice. The final decision was to use in-house composers/orchestrators, Joe Thwaites and Jim Fowler. According to Manager Lindsay, aside from the duo's musical talents, their technical understanding of Wonderbook's complex music delivery system and ability to implement their work proved extremely beneficial to the development in terms of a coherent, cohesive integration into what had to be a world-class title.

Lindsay: "There are three layers of music – able to run concurrently in game – firstly, the minimal base layer which is essentially harmonic structure. On top is an active layer with melodic content, which is ducked whenever voiceover plays. Then there's an incantation layer, which has the musical motifs of the spells that you've learned. Subtly adding that layer and manipulating all three adds a great deal of variety. All the transitions are tempo-synced and fine tuned to be as smooth as possible.

"Stylistically, there's an overall progression that follows the tone of the book itself and the story – starting off quite light, becoming darker and more epic as you go deeper. It reflects the music style of the era of the book's origins then moving through about 100 years of musical history, using different orchestration and composition techniques as appropriate. Each chapter is like a symphony with movements – theme and development, recapitulation, and so on. This was the high level concept but we also >

"Stylistically, there's an overall progression that follows the tone of the book itself and the story – starting off quite light, becoming darker and more epic as you go deeper. "

Alistair Lindsay, Music Manager

HANDLING SCRIPT & SPEECH FILES FOR WONDERBOOK

According to Garry Taylor, Sony Computer Entertainment Europe's audio head honcho, the organisation's Localisation Asset Management System (LAMS) has now been used in some 130 titles developed around the globe. If you need to keep track of thousands of dialogue lines across multiple language translations, LAMS is an absolute Godsend. Every conceivable script detail can be imported into it and all data can be tagged in a fully customisable way. The system then tracks the journey and progress of each speech asset, from numbering lines to creating a placeholder robot voice version, to tracking deleted lines and changed lines and their history, through to defining and governing agreed file naming conventions – an integral and vital part of the workflow. The system can spit out the script in different formats with different information for different purposes e.g. a recording script for the editing engineer as opposed to say a vo actor's script for the booth. Once a clean English set of speech assets is finalised, those clever Localisation folks around the globe can dial into the system, translate the final post-record conformed lines (important details such as whether the translation should be time-locked to animation are clearly flagged), cast and record actors, and upload their own speech assets. Voila.

Book of Spells' Lead Sound Designer, Joanna Orland, is based at Sony's Creative Services Group HQ in London where, as well as her own production room, she has access to two well-equipped Pro Tools mixing suites. In a break from her normal modus operandi, it was decided the creative and technical implementation sides of the *Book of Spells* sound design would be separated, allowing her more time to focus purely on sound creation and audio driving game-play, with others handling integration.

Orland: "Of course in the end I did have to spend quite a lot of time explaining my intentions to a technical sound designer! Nevertheless, it was still a great opportunity to focus wholly on creativity. This is a creative industry first and foremost. Unfortunately as we get very busy with the production process, this aspect can often get neglected, with implementation restrictions driving the creativity rather than the other way around as it should be. We had two audio contractors, Sam Jones and Christopher Don, who focused solely on implementation. I would communicate my vision to them using videos or verbal explanations, and they would strive to make sure the sounds were implemented into the game as closely as possible to my vision."

When it came to inspiration and reference points, Orland avoided any previous Harry Potter influence: "While tied to the Harry Potter world that JK Rowling has built, *Book of Spells* is its own entity, based within that world – but not on those characters – so we tried to separate ourselves where possible. When conceiving the audio style of *Book of Spells*, I started by doing research on the 'sound of magic'. As magic is an abstract concept, I wanted to know what people's perception of its sound might be. Most people seemed to think of it as musical, with elements of harps and chimes as its source. Then I decided to examine where their perception came from, and watched a lot of fantasy films and television series to see what patterns I could find. From my research, it was evident that all those musical sounds that people associate with magic are all generally found in musical scores rather than the sound design itself. More often than not, the fantasy genre portrays the sound of magic as natural, using sounds from nature.

"I decided to take this approach sourcing all of my magic sound effects from nature and divided them into categories based on the four elements – earth, air, fire, and water. This audio style of 'elemental magic' was then able to carry over to the spells themselves and opened up communication between the audio and design teams. We proceeded to classify each of the spells based on the elements that they most closely resembled. For example, the Aguamenti spell is based on the water element, the Wingardium spell is air, the Incendio is fire, etc. All major sound effects were created using this elemental asset palette, the exception being some of the creature voices where we would record each other in the studio making some odd vocal noises!

"As we were working with someone else's creation, it was important for us to have their approval of the audio style of *Book of Spells*. By creating an audio style guide and basing all of the magic in nature, we were able to pre-agree on a lot of the sound direction before the creation process. We used the four elements as a communication tool, and all spells were discussed before they were created, so there was very little iteration after a first pass had been created. If a designer wasn't happy with one of the sounds, they could approach the audio team with a more basic language and define what was wrong using the elements. For example, 'the Wingardium spell is too earthy, it needs to sound more of air', and so on.

"By using all natural sounds based on the elements, this abstract idea of magic was made into something tangible. By basing the sounds in the player's own reality, magic now feels like a believable concept for the player, bringing the game to life in their very own realm."

brought that into an interactive system. In total, there's not far off three hours' worth. Everything was prototyped using sample libraries and MIDI recording before subsequent orchestral recording at Air Studios, London (engineered by Jake Jackson). We worked really hard to make the re-play and transitions as seamless as possible."

The music is implemented into the game software using Sony's proprietary Scream tool. Composers and sound designers with technical understanding can independently integrate the myriad one-shot and looping segments e.g., for an 'underscore' there would be: start, end, spreads, base, and active layer with five incantation themes, five fanfares, test start, five test banks, ten practice banks, and ten anecdote banks.

Lindsay: "Getting this system and organisation right was quite a challenge also involving dynamic loading of data in-game, but of course, this has to also take account of how the rest of the game is managing data. As well as Scream allowing us to organise our files logically, it also has very powerful scripting facilities. We are able to use midi files to define information such as time signature, tempo and markers e.g., for transition points.

"Originally, we didn't plan to go down the route of wall-to-wall music – we're not big fans of that in games, but actually, this is something new and though you have VO and spot sound effects, you don't have much environmental sound in a title like this. We figured there would be lots of gaps and silence because of this so we made the decision to have a music backdrop gluing it all together. We just had to be sure it wouldn't become annoying at any point, hence all our efforts to ensure it doesn't get repetitive and that it's easy on the ear."

The end result is a delightful aural experience where nothing jars. Considering the plethora of music cues across different musical keys replete with dozens of stings, and the fact the music plays more or less continuously throughout, it's a considerable achievement.

SCHOEPS Mikrofone

Award winning film sound

Double MS Surround with CMIT Shotgun

Supercardioid

SuperCMIT

MS Stereo

SCHOEPS GmbH
Spitalstr. 20
D-76227 Karlsruhe

www.schoeps.de
mailbox@schoeps.de
Tel. +49 721 943 200

The Ten Monitoring Commandments

It might not be very fair to ask for decades of art, science, and collected wisdom to be summed up in 800 words, but that was the challenge we set John Storyk – to suggest a set of ten monitoring commandments. Note that the order isn't significant, and of course, there will be exceptions.

EXPERT *Witness*

John Storyk (left) and Beth Walters

1. Monitoring does not happen in a vacuum.
A speaker must complement the environment that it will be placed in, both in size and in position. If you need one commandment, this would be it!

2. Monitors have personalities.
There is no getting away from that concept. Every year, I am amazed that a new 'improved' crop of monitors is introduced to the pro audio community. The fact is that many of them really sound great! But like cars or fashion, not every monitor is perfect for every listening experience. We need to remind ourselves of this. When I am asked to recommend 'the best monitor' my response is usually (after getting a bit of programming information about the use), to list a family of recommended monitors. Choosing a monitor is like choosing a mate. You need to listen to them carefully and make sure that you can live with them. This is a very personal decision.

3. Determine the real maximum required levels and the real frequency range these levels need to respond in.
For instance, monitoring for a TV broadcast mixing suite (typically in the 200-300 square feet range) will require a very different monitor solution than an urban music tracking and mixing environment (typically twice as large and requiring levels in excess of 110dBC at the listening position).

4. Nearfield monitors are not automatically accurate.
Beware of their often-limited frequency response (particularly below 100Hz) as well as the tendency to incorrectly position them on a console bridge. This location will often result in the most common of all problems – first order comb filter generating early reflections, thus causing a time domain shift and ultimately frequency response inaccuracies. To avoid comb filtering do not position nearfields on top of the furniture or console! If space is limited, angle them upwards to reduce this effect. Poorly positioned nearfield monitors tend to lead to mixes with excessive time effects (reverb/delays) since the direct sound is heard with more presence.

5. In setting up for surround, start with ITU standards.
This is particularly true with respect to equidistant positioning of all monitors in both horizontal and vertical axes. This can often be difficult, but try to start with this geometry in mind. If the distances are to be non-equal, it is usually better to have the surround speakers further away (compared to the front speakers). Adding delay for closer speakers (moving them further away) sounds less natural due to room reflections that cannot be controlled electronically.

6. Understand SBIR (speaker boundary interference).
Although we could go back to commandment #1, this is worth a separate entry. Most monitors in free field will exhibit a tendency for lower frequencies to radiate in an omni-directional fashion. This tendency will cause phase cancellation and reinforcement to happen as speakers are located near stiff boundaries (corners in control rooms, for example). Locate speakers away from corners, or if not possible, then use appropriate rear speaker absorption to compensate for this effect. Even better, soffit mounting will naturally eliminate this issue.

7. If possible have all monitors at ear level or slightly above.
This is the safest way to eliminate first order reflections from consoles and similar mix position horizontal surfaces, and thus will help eliminate harmful comb filtering effects.

8. DSP control is not a bad component in a monitor system.
In fact, in most instances, I would encourage it. People often claim that incorporating these types of added electronic (tuning) devices is inappropriate. However, there are virtually no monitor systems today that do not include some kind of electronics within the system. In the past, tuning got a bad rap, not necessarily because of bad electronic devices (although some were awful!), but more often because of poorly executed tuning protocols. Tuning requires an entirely new set of Commandments (new mountain top to come down from), but good DSP control that is sensitive to both frequency and time domain issues can truly add a wonderful dimension to the accuracy of a monitoring system in a well-designed environment.

9. In final calibration (tuning) do not use 1/3Oct band EQs; try to use a parametric.
A DSP system will allow for asymmetrical parametric creation (a very cool trick that requires some practice). More advanced DSP systems will also allow for time alignment, which of course is particularly useful with a bass management sub (becoming more and more common in studios).

10. Do not chase reflection anomalies.
These time domain issues are particularly noticeable at higher frequencies. DSP control is much more useful at lower frequencies and in cut mode rather than boost. Before advanced tuning or calibration, make sure that the basics (consider them mini commandments) are in place:

- Symmetrical positioning of monitors in all axis.
- Levels need to be equal.
- Phase must be correct.
- Components are not damaged.

There is no sense in wasting time on commissioning and tuning until all these items are addressed.

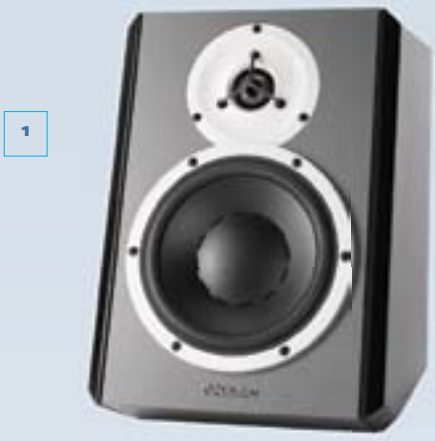
John Storyk is an Architect and Acoustician, and Co-Principal (founding partner) of the Walters-Storyk Design Group. He has provided design and construction supervision services for the professional audio and video recording community since the 1969 completion of Jimi Hendrix's Electric Ladyland Studios in New York City, and has since been responsible for over 2,500 production facilities.

WSDG is a worldwide, full-service acoustics and audio/video design firm, specialising in critical listening and viewing environments of various types, now celebrating its 40th year in practice, and employing over 50 professionals in six offices across four continents.

>

Monitors

A long, hard day in the studio means absolutely zilch if you can't actually listen back to what you've created. Studio monitors need to present your work at its best, and give you the opportunity to hear what's right – and what's wrong. Need some help? Audio Media is listening...



[1] Dynaudio probably has something for you in its BM Series. The DBM50 desktop monitor has an innovative wave guide around the tweeter; an optional level controller is also available. The BM5A Compact offers two x 50 watt amplification in a 170 x 260 cabinet. The BM5A MKII is a nearfield monitor, with a woofer offering longer excursions.

The BM6A MKII and BM12A are two-way full analogue nearfield monitors with 6.9-inch woofer and 1.1-inch soft dome tweeter, and an eight-inch neodymium magnet woofer and 1.1-inch soft dome neodymium tweeter, respectively. The compact BM6A features an electronic fourth order phase-aligned crossover with a crossover point at 2.2kHz, which feeds two high performance discrete MOSFET 100W amplifiers. The BM15A is a two-way active system comprising a 10-inch woofer, an ESOTEC soft dome tweeter, and a phase-aligned crossover.
www.dynaudioprofessional.com

[2] Eve Audio's SC4 series comprises two models: the SC407 and SC408. Both models feature a powerful amplifier array, with one amplifier per driver. The larger woofers duplicate all frequencies up to a certain crossover frequency. The mid-range woofer picks up from there. The SC407 is the smaller monitor, featuring two 6.5-inch SilverCone woofers, which along with a 1.5-inch voice coil extend the bass frequency response down to 35Hz, and work simultaneously up to 280Hz. The proprietary AMT RS3 tweeter houses a bigger magnet system to deliver a higher output level with virtually no distortion. The SC408 features a pair of eight-inch SilverCone woofers. A 1.5-inch voice coil, a five-inch mid-range unit, and the AMT RS3 tweeter completes the system. Each driver is provided with its own PWM amplifier able to deliver a short-term output of 205 W per channel.
www.eve-audio.com

[3] Focal Professional has three lines of monitors available. The SM9 is actually composed of two monitors in one unique unit – a three way monitor and a two way monitor. The SM6 line is Focal's reference analogue series, created for studios in search of monitors that reveal all the information without any masking effect. There are three speakers in the line: the compact Solo6 Be; the versatile Twin6 Be, which is Focal's best seller; and the Sub6 subwoofer. The CMS line is particularly dedicated to post-production studios, small listening rooms, and radio studios. The range comprises the small CMS 40; the CMS SUB; and the CMS 50, which has a design that allows a listening position from 19-inches while still being able to place the monitors far apart. The CMS 65 is the reference standard of the line, with a stable tonal balance.
www.focalprofessional.com

[4] Genelec has introduced its new Smart Active Monitor (SAM) concept. Its DSP monitors now come under the SAM classification, which now includes all Genelec monitors with a 82xx product name (such as the 8260A Tri-Amplified DSP Monitor System). Models in the SAM range are capable of automatically adapting to acoustical environments. A SAM system can be controlled with digital networking, enabling users to build highly flexible computer-controlled systems of monitors. The features of SAMs can be optimised with automatic calibration for different working styles or client demands. Adaptations include aligning levels at the listening position, adjusting delays from the signal input to the listening location, and compensating for the acoustical room influences in the frequency responses. One of the tools used is AutoCal, Genelec's calibration solution. Users can achieve a flat frequency response at listening position, and handle phase alignment between monitors and subwoofer.
www.genelec.com

[5] KRK Systems' VXT Series of monitors consists of three models: the VXT4, VXT6 and VXT 8. The monitors all contain a domed tweeter made of true silk for faster transient response, and a new woofer design with a stiffer, lighter cone that provides low distortion, and extended low-end. Both have vented formers to remove heat and reduce the effect of power compression. The radically curved surfaces of the enclosure virtually eliminate diffraction. The VXT monitors all feature front-firing ports, which are shaped to reduce port turbulence. The cabinets use ABS Structural Foam, a very rugged and extremely impact resistant material that allows the engineers to create a speaker with internal parallel walls, thereby preventing sound-colouring internal nodes. The material also has excellent damping characteristics.
www.krksys.com

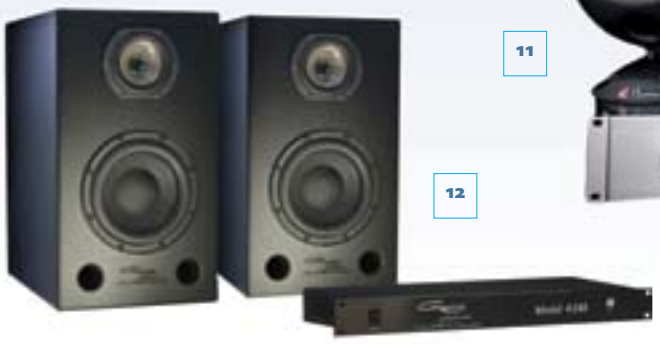
[6] Neumann's KH Series is currently made up of five speakers. The KH 310 A three-way active tri-amplified monitor features a Mathematically Modelled Dispersion Waveguide (MMD), flexible acoustical controls, various input options, and an extensive range of mounting hardware. This allows the loudspeaker to be used in diverse acoustical conditions, with any source equipment and in a wide variety of physical locations. It is designed for use as a near-field monitor, as a front loudspeaker in mid-sized multi-channel systems, or as a rear loudspeaker in a larger multi-channel system. Also available is the KH 120 D active studio monitor with digital input, which also has a MMD waveguide, plus analogue class-AB amplifiers, and various analogue and digital input

7

8

9

11



12

10

formats. The KH120 A is very similar but without digital input. There are two subwoofers in the range: the KH 870 and the KH 810, which both offer a 7.1 High Definition Bass Manager.
www.neumann-kh-line.com

[7] PMC's twotwo series currently comprises two models – the twotwo.5 and the twotwo.6 – both designed and built in Britain. twotwo series models share the same core design and features – the model number refers to the approximate size (in inches) of the bass driver, with larger numbers denoting increasing cabinet volume, greater bass extension, and higher SPL capabilities. The monitors are able to operate in either a vertical or horizontal orientation with no compromise to stereo imagine or tonal accuracy, making them ideally suited for nearfield monitoring of music and speech in situations where space is at a premium. They are true compact reference monitors with ATL bass loading technology and Class-D amplification. A powerful DSP engine controls driver response, crossover, and EQ. The monitors offer transparency and a neutral balance.
www.pmc-speakers.com

[8] If you like the Yamaha NS10 but feel that it needs more output and an extended bass response, then you might want to take a look at Studiospares' SN10 passive nearfield monitor. The SN10 incorporates an eight-inch driver (as opposed to the NS10's 6.5-inch driver). It has a massive magnet, which together with the increased size, uprates the power to 8Ω. The HF output is handled by a one-inch soft domed tweeter driven by the crossover, which operates at 3.2kHz. An active version is also available, with an Aktivate 85 powering unit attached to the back.

Also available from Studiospares is the Aktiv8 nearfield active monitor series, available in three versions with different size drivers and power ratings. A separate, matching active sub is also available – another monitor with a low price point and a powerful performance.
www.studiospares.com

[9] Speaking of Yamaha... its MSP STUDIO series monitors place the emphasis on 'reference-quality reproduction precision', that let the sonic details shine through, rather than producing a flattering sound. They are the descendants of the aforementioned NS10M, taking advantage of dramatic advancements in technology to deliver consistent quality and performance, and providing the ability to handle any combination of digital and analogue sources as well as stereo and surround formats. There are three speakers in the range: the MSP7 STUDIO, which is a two-way bass-reflex bi-amplified nearfield studio monitor featuring a 6.5-inch cone woofer and one-inch titanium dome high-frequency unit; the MSP5, which offers a five-inch cone woofer and 67 watts of dynamic bi-amplified power; and the SW10 bass-reflex powered subwoofer, which has a 25Hz-150Hz frequency response and 180 watts dynamic power. It also has XLR balanced inputs and outputs.
www.yamahacommercialaudio.com

[10] ADAM Audio has a variety of ranges to choose from, the newest being the F Series. Consisting of two nearfield monitors and a dedicated subwoofer, the aim of the F Series is to 'focus on the essence of ADAM speakers at a new, lower price point'. The F5 and F7 nearfield monitors feature a newly designed version of the ADAM proprietary Accelerating Ribbon Technology. These tweeters reproduce the high frequencies with 'the very airiness, clarity, and detail ADAM is famous for'. The high performance woofers are designed to seamlessly integrate with the tweeters' performance. The SubF subwoofer has been specifically designed to match the F monitors and complement them in any set up.
www.adam-audio.com

[11] The SE Munro offering is a bit different to anything else out there. The Egg 150 Monitoring System is the first in a series of sE Munro 'Active Integrated Monitoring Systems', designed by Andy Munro, James Ishmaev-Young, and Siwei Zou. The traditional wooden box is replaced by a curved enclosure that practically eliminates distortion and resonant effects. It is a complete system with a free standing control unit that delivers a bi-amplified power match to the egg drive units, source select inputs, active analogue crossovers, LF and HF trim pot equalisation for room and location set-up compensation, and a mid-band control to emulate the mid-range response of NS10 type speakers.
www.seelectronics.com

[12] The Pelonis Signature Series is a line of critical listening high fidelity monitors. The latest addition is the Model 42, an active, bi-amplified system controlled and powered externally by four 100 watt amplifiers and with 96k DSP. The user has access to five bands of parametric EQ, including the option for shelving on the first and fifth band. It is possible to grow the system from stereo to a variety of multi-channel configurations. Also available is the PSS110P, based on a custom 10-inch Tannoy driver, with an elaborate passive crossover. Large monitors from Pelonis include the PSS115, PSS215A, and the PSS215AW, with each system personally voiced by Chris Pelonis.
www.pelonissound.com

NEUMANN.BERLIN

Studio Monitor KH 120

KH 120

A member of the Neumann KH Line

Subwoofer KH 810 –
recommended for KH 120

Test reports www.neumann.com/StudioMonitors

Sennheiser UK Ltd · 3 Century Point · High Wycombe · Buckinghamshire HP12 3SL · +44 (0)1494 551551 · www.sennheiser.co.uk

EXPERT
Witness

Which One Is Mine?

KMR's Keith Malin discusses the most common question of them all...

Without question, the most common enquiry we receive here at KMR is 'What monitors should I buy?' We really wish we could answer this question in the way customers want us to, by giving them a make and model. Unfortunately, this is impossible. The choice is, quite simply, overwhelming. But it's overwhelming for a very good reason. When it comes to studio monitoring, tastes, requirements, and situations are incredibly diverse.

To help answer the ubiquitous question of monitoring, we reply with some questions of our own, and these questions really need to be addressed if you are considering investing in a new monitoring system. First we ask budget – no point in us recommending £3,000 monitors if you only have £300 to spend. Second, we try to ascertain what type of speakers you've used in the past with some degree of success. We can often find something of similar, but improved, ilk if we know what type of monitors the user is used to. We have found there are certain 'types' of monitors that tend to emphasise different parts of the audio spectrum, and whilst we might have our own opinions as to what the best 'type' might be, it's really irrelevant – the worth of a monitor is how well the user understands it. So if the engineer is used to bright sounding monitoring, or bass heavy monitoring, if the room in which the monitors are situated lend themselves to one type or another for example, then we can narrow down the field for the prospective buyer. We also need to discuss where the monitors will be situated, what kind of room they will be in, what kind of music or audio work is being done in the studio, and what the purpose is for the monitors – mastering, mixing, playback, and so on.

Rather than discuss the benefits or drawbacks of front or rear porting, sealed cabinets, transmission lines, subwoofers, two-ways, three-ways, four-ways, DSP, passive, active, and everything else, I would like reinforce that point: the worth of any monitoring system is in how well the user understands it. Really – forget what you've read or have been told. Forget specs and manufacturers charts. Use your ears. If you are using a battered old pair of hi-fi monitors made in the seventies, and understand every element of its vagaries, where the holes and peaks are, and exactly how it translates, then it seems to me like you have a perfect pair of mix monitors. If, when checking mixes back >

Monitors

[13] There are a few options available from Sonodyne, with the latest being the new SM200Ak two-way studio reference monitor. The enclosure is a combination of wood and aluminium; the aluminium die cast baffle ensures that the eight-inch Kevlar LF and the one-inch metal dome HF are firmly mounted and vibration is minimised. Additionally, the curved edges of the solid baffle minimise diffraction. The baffle also features an integral waveguide for the HF. The inbuilt low distortion amplifier module continuously provides 150 watts to the LF and 100 watts to the HF, and feature room compensating bass and treble tilts.
www.sonodyne.com

[14] From Trident Audio Developments comes the HG3 monitor. Its unique cabinet configuration is designed to reduce or eliminate issues such as limited dispersion and bandwidth, distortion and diffraction. The HG3 has crossover points set at 320 Hz and 3500 Hz to avoid issues caused by splitting the vocal. The mid-range speaker is mounted in an isolated, six-inch diameter, damped, inert cylinder, with a ½-inch closed-cell wall thickness. The cylinder also houses the silk dome tweeter, its crossover, plus the mid and tweeter level controls. A separate 60 watt amplifier drives the cylinder mid and treble components. The rotating cylinder lets the listener position the critical directional components as needed.
www.tridentaudiodevelopments.com

[15] Unity Audio offers The Rock and The Boulder as monitoring options. The Rock MKII is now shipping, with some improvements inspired by the introduction of The Boulder, including a shared low frequency amplifier design. The Rock is touted as a 'brutally honest' monitor, with no EQ controls. It has a sealed cabinet with no port – giving excellent bass accuracy. The Boulder is a three-way active monitor with co-axial mid-range tweeter. It shares some material and design features with The Rock, such as a Baltic birch plywood cabinet and Corian front baffle bonded to an internal wooden baffle (The Boulder has a 30mm slab of Corian in comparison to The Rock's 12mm, however).
www.unityaudio.co.uk

[16] The A25-M main/mid-field reference monitor is, PSI Audio says, the pinnacle of its current system development. It has a precision of +/- 1.5 dB tolerance between 38Hz and 20kHz. The tweeter unit is hand-crafted in-house. The tri-amplified output stages have a protection circuit, which can be monitored via the red LED on the front panel. The active crossover with integrated 'CPR' gives the A25-M 'unprecedented' impulse behaviour, with excellent stereo imaging. The crossover is also optimised for maximum phase coherence, which allows for a very broad horizontal and vertical ideal listening area.
www.psiaudio.com

[17] JBL has a few series of monitors in its range, including the LSR6300 series. Each model in the series provides 'ultra-flat response and extraordinary SPL capability'. All models are shielded, ready for mounting, and THX pm3T approved. The LSR6332 is a linear spatial reference studio monitor system, incorporating a 12-inch Differential Drive dual coil woofer, five-inch Kevlar mid-range speaker, and one-inch titanium composite tweeter. It has a high-density baffle for low enclosure resonance, and its linear dynamics aperture port design eliminates port turbulence and reduces port compression.
www.jblpro.com

[18] Behringer says it designed its B2031A monitors to 'speak nothing but the truth'. The TRUTH B2031A is a two-way reference studio monitor, which can achieve output levels in excess of 116dB SPL. Powered by separate 80 and 25-watt built-in amplifiers with an active crossover, the monitors provide ultra-linear frequency response from 50Hz to 21kHz. It offers a long-throw 8.75-inch polypropylene-diaphragm woofer that delivers deep bass, while HF content comes courtesy of an ultra high-resolution one-inch ferrofluid-cooled tweeter mounted on a proprietary wave guide.
www.behringer.com

[19] Meyer Sound's Studio Series is comprised of three products. The classic HD-1 high definition audio monitor offers excellent phase accuracy, flat frequency response,

and stable imaging in a variety of near to mid-field applications. The compact, self-powered X-10 high resolution linear control room monitor exhibits extremely low distortion and a wide sweet spot. It uses control technology adapted from avionics to give it a very linear response characteristic: the frequency curve does not change with variations in output levels. Also available is the X-800 high power subwoofer.

www.meyersound.com

[20] Fostex has a new studio monitor, the Japanese firm's first two-way system. The PM0.3 is available in three colours – grey, white, or classic black; and is a professional quality speaker system combining a dedicated three-inch LF fibreglass cone woofer and three-quarter inch HF silk dome tweeter drivers with a built-in class D amplifier. It is a compact monitor, with a highly efficient built-in digital amplifier that offers 15W per channel. It has two inputs; RCA (L, R) and stereo mini, and a matte-finished front baffle.

www.fostexinternational.com

[21] Acoustic Energy's Professional Series contains the AE1, originally launched in 1988, and the AE22 plus the AE ProSat satellite monitor system. The AE22 was introduced in 2007, and the AE1 re-launched at the same time. The AE22 is available as both an active and passive model, and is a low distortion, sealed-box speaker with an 'exceptional' time domain performance – better than 40dB down within 5ms – and good horizontal and vertical off-axis consistency.

www.acoustic-energy.co.uk

[22] Barefoot Sound's all-in-one MicroMain27 has a one-inch soft dome tweeter and dual five-inch mid-bass drivers, plus dual 10-inch subs in compact enclosures. The sub motor structures are locked together and so the opposing forces cancel out. can be placed vertically or horizontally. The MicroMain35 puts the same three-way technology into an even more compact enclosure.

www.barefootsound.com

[23] Blue Sky's eXo2 is an evolution of the original eXo stereo monitoring system. As with the original, it combines true, full-range monitoring with a desktop remote control hum. In order to allow the subwoofer to more easily integrate into compact workspaces, it has been greatly reduced in size. The original eXo sub was approximately a 14-inch cube; the new SUB is much smaller but has much the same performance as the original eXo system.

www.abluesky.com

[24] ESI's new aktiv 05 nearfield reference monitor is a descendant of the nEar05 model. With an ultra-flat low frequency response aided by its newly designed larger silk dome tweeter, and Kevlar five-inch driver giving 'unparalleled punch' in the low-mid frequency, the aktiv 05 also utilises a completely new crossover design. In the same range, the aktiv 08 monitor is based on the nEar 08 eXperience, and features an eight-inch Kevlar driver.

www.esi-audio.com

[25] M-Audio has extended its BX studio monitor series with the BX5 D2 and BX8 D2. A natural silk high frequency dome and a fully-isolated HF driver ensure minimum distortion. Both feature a Class A/B bi-amplified design, which dedicates separate power amps to the high and low frequency, plus Kevlar LF drivers. A pinhole power LED makes finding the sweet spot easy – the right listening position is achieved when the power LEDs appear to be brightest.

www.m-audio.com

[26] ME Geithain's RL 930K, an all-round main control studio monitor, uses K Technology (cardioid radiation characteristics in the bass range) to minimise rearward-directed room reflection, making it easy to position. Low and middle frequencies are reproduced by a specially developed 10-inch cone loudspeaker. For high frequencies, three vertically arranged one-inch tweeter calottes are positioned in front of the bass/mid-range system. The directivity index has been optimised for listening distances between 2.5 and 5 metres.

www.me-geithain.de

[27] Mackie's HRmk2 high resolution active studio monitors feature a cast aluminium Zero Edge Baffle that minimises diffraction and controls sound waves for a clear image of the mix. Working with the baffle's contours, the passive radiator design delivers a tight and distortion-free bass extension. The black wood cabinet adds warmth to the sound. There are two monitors available: the HR824mk2 and the HR624mk2, which feature an eight-inch and six-inch LF driver respectively.

www.mackie.com

[28] Roland's CM-30 CUBE monitor delivers 30 watts of 'audio punch' through a rugged, high-quality 6.5-inch coaxial two-way speaker with stereo pre-amp. Roland sells this as an ultra-versatile monitor for studio applications and also for live monitoring onstage. The classic monitor from Roland is the RSM-90, a two-way passive monitor based on Roland's DS-90 speaker/cabinet design, but with custom crossover circuitry and front-firing dual bass ports for phase-correct imaging and ultra-flat frequency response.

www.roland.com

[29] Samson Technologies offers the Resolv range of studio monitors, recently redesigned. A new cabinet design features an inset, time-aligned waveguide, and a rounded inner edge on the tuned low frequency port. With dedicated power amps and crossovers custom-designed for their speakers, Resolv's high and low frequency drivers produce only those frequencies for which they are most efficient. New woven carbon fibre woofers provide tight, controlled low frequency response, while silk dome tweeters give smooth highs.

www.samsontech.com

[30] Tannoy has followed up the Active and iDP versions of its Ellipse studio monitor with a passive range. The range comprises the Ellipse 8 Passive, featuring an 8 Dual Concentric driver, and the Ellipse 10 Passive, featuring a 10 Dual Concentric driver. On both models, the Dual Concentric components and the SuperTweeter are matched by a precision low-loss crossover network. The drive units are mounted on an elliptical shaped baffle to minimise diffraction.

www.tannoy.com

> on other systems, you are finding that these mixes do not translate, or elements of the track are not sounding right, then you probably need new ones.

Now, the following may seem obvious but we say it several times a day, so it's probably worth committing to print: how best to go about getting the right monitors? Well, first, establish a budget. Be realistic. Good monitors cost money, though there are some excellent value brands out there.

If you have an idea of the type of monitors you like, or have had success with in the past, that will help a dealer narrow down your choices. Otherwise, within your budget, there are likely to be at least half a dozen models to listen to. At least. Bring some material you know very well, and spend a while switching between different sets. Some humble words of advice now – don't spend too long doing this. Ears shut down quicker than most realise, and often early and instinctive opinions turn out to be the right ones. Also, don't listen too loudly! Ears are precious, and I presume are the backbone for most of our livelihoods – there really is very little need to monitor at high levels for long periods. Please be careful. Once the selection has been narrowed down, hopefully between a couple of pairs, the final thing to do is to test them in the room. This really is vital. Monitors can sound very different indeed in a dealer's listening room to a studio. So it is important that they are taken back and tried in situ, to make sure the room does not reveal any negative aspects of the speakers. If they sound right in the room, and you have tried a mix that translates to another system, then you really are in luck – many of our customers remain disappointed that they still haven't found the perfect monitoring system for them. Which is why I say that there is plenty of room for more speaker manufacturers. No brand dominates, nor will it. And remember, the worth of any monitors is how well the user understands it!

KMR AUDIO

This month's Expert Witness, Keith Malin, is the Managing Director of KMR Audio, a UK-based professional audio dealer and distributor that specialises in every aspect of the studio including monitoring, acoustics, software, wiring, outboard, furniture, and microphones – from pre-purchase conceptual chats, to presenting a fully functional and bespoke studio.

W www.kmraudio.com

T +44 (0)20 8445 2446

"Not all great products are hand-built and cost a fortune, and the XB10 is a perfect example of a great product that is primarily great because it has been well thought out."

Alistair McGhee

Allen & Heath XB10

Compact Broadcast Mixer

To be frank I rejoiced when Allen and Heath released the XB14 broadcast mixer aimed at the affordable end of the radio market. I was just pleased a manufacturer would be bothered to take an interest in the somewhat neglected area of specialist radio mixers, and that having a wealth of experience in building mixers for the hotly competitive music market that radio would get a proper mixer at an attractive price. And so it turned out. Which leads us to the XB10, a little brother to the XB14 and even more affordable.

The XB10 is a teeny tiny but solidly built mixer featuring three mic inputs, a telco input, and three stereo inputs on quarter inch jacks. It has a fully duplex USB (1.1) interface built in, main outputs on XLRs, complete with inserts and variable limiters. As befits a broadcast mixer, the XB10 is stuffed full of radio-friendly features. Nice to see 60dB of gain and a swept mid EQ on the mono channels, plus there's simple high and low filters on the Telco channel, and the stereo inputs have high and low EQ available.

Each microphone input has a built in compressor, which applies 10dB of gain at low levels, has a soft knee at a fixed -20dB, and limits at the top end. The channel gain seems pretty clean and usable up to the 60dB limit. You can hear the dynamics working if you max it out, but with a little common sense applied to the gain structure, you get a very acceptable result.

Each channel has a latching 'on' button. When the channel is 'on', it is mixed to the programme bus and is available to send to the Aux bus pre- or post-fader. However, deselecting the 'on' function routes the channel to the Alt bus, and the Aux send is pre-fade only. This allows you to quickly set up a separate mix on the Alt bus that is not going to your main output.

You get even more flexibility with the record output, which can be congured for rapid recording independently of the main output. This is especially handy when used with the Telco input. The Telco channel is on a quarter inch jack as is the clean feed output – the clean feed has its own talkback and a choice of sources. You can plug your standard telephone hybrid into the Telco channel, or if using Skype this can take the USB input to the mixer from your computer. If you send your presenter mic to the Aux prefade and select Aux to provide clean feed, then the 'Cleanfeed and Telco' option on the record output allows you to record a quick phone interview while the mixer is happily replaying some music or other audio from one of the stereo inputs. Or you could knock off some links or a quick studio interview using exactly the same principle. Both the Aux and Alt busses are available only in mono.

Using the Telco input is just one way of getting the output of your computer onto the XB10, while the Telco option gives you a mono feed of the USB, input channel ST3 (stereo three) is normalled to the USB input and is a stereo feed. One neat little feature on both the Telco and stereo inputs is that the USB feed arrives via the channel trim pot. This means that after setting up your levels initially, you can set your preferred working range for the channel without having to continuously fiddle with the computer settings; and if you are working the Telco input direct to the record output you can still set levels on the channel trim.

There's also a seperate stereo monitor input on phono connectors. This feed is normalled to the input Stereo 1, broken away when you plug a source into the jack inputs of the channel. Broadcast bunnies have special monitoring needs, and in the XB10 this is reflected in quite a complex monitoring panel. There are two discrete headphone outputs, operator and guest, both with individually switchable feeds and a talkback to the guest output. Like the clean feed talk back, this is derived from the input to Mic 1, although you can change this to any of the mono channels using internal jumpers. The selector banks are additive (reminding me of Audio Developments mixers) so you can monitor Aux and Alt outputs by depressing both selectors. There's also a separate pot for the monitor output, and the option to mute the monitor output when any of the mics are selected to the programme bus. A word here about mic switching – as far as I can see, most of the radio world mixes on the 'on' switches (I suppose similar

From The Manufacturer:

"The XB-10 is the only mixer at its price point with pro-broadcast specific features and interfacing, and allows you to do more with less ancillary equipment such as VOIP communication using the USB interface and mix-minus Telco channel. It is the ideal mixer for low channel count broadcasts, interview shows, and mobile applications."

Mike Griffin, R&D Designer, Allen & Heath

THE REVIEWER
ALISTAIR McGHEE began audio life in Hi-Fi before joining the BBC as an audio engineer. After ten years in radio and TV, he moved to production. When BBC Choice started, he pioneered personal digital production in television. Most recently, Alistair was Assistant Editor, BBC Radio Wales and has been helping the UN with broadcast operations in Juba.

to mixing on the mutes on a music desk) – generally BBC types prefer the faders, and therefore rely on microswitches in the faders switching off the monitors as the fader or pot is opened. Not withstanding the operational arguments, mixing with rotary pots is much harder than with linear faders, so using the switched approach makes better sense. While on the subject of different ways of working, the channel pots on the XB10 all max out at odB – i.e., there's no extra gain in the channel pot – though of course you have plenty of gain at the trim pot. Again, this is normal operation for 'self op' radio.

The record outputs are on phonos and are switchable between main out (pre the master gain control) and either an Aux, Mono split, or a Telco Clean Feed split. You get the same flexibility for the feed to the computer via the USB. The Telco/Clean Feed option allows you to send clean feed to Skype (other VOIP apps are available) while enabling you to record the interview on the computer at the same time.

The main outputs are fed from the master gain pot and appear on XLRs. There are unbalanced inserts available on quarter inch jacks. Unlike the XB14, the XB10 includes output limiters. The controls are deliberately non-user friendly – they're on the back panel and require a 'tweaker' for adjustment. While you're round there, you'll find the 25-way D socket with logic control outputs for remote starts, mic monitor cuts, external mutes, and the like.

I plugged the XB10 into my XP PC and within two minutes Windows had sorted itself out, and playback and record worked without drama. OSX Lion too exhibited perfect plug and play. If I had a niggle about the XB10, it would be the lack of multiple computer outputs via USB – many stations run completely from software play out, and the option to mix the outputs on the desk without additional hardware is the way forward.

Not all great products are hand-built and cost a fortune, and the XB10 is a perfect example of a great product that is primarily great because it has been well thought out.

I can see definite improvements over the XB14 – the dynamics being a case in point – and the XB10 just packs in loads of broadcast friendly features in a small footrprint at a very attractive price. For Internet radio, student radio, or a radio mixer for a small OB this is unrivalled. Marry this to a low cost playout system (try StationPlaylist), add a mic and some headphones, and there is nothing to stop you being the next Chris Moyles – if you're not careful.

Information

Feature Set
- **Built-in USB soundcard**
- **3-band swept mid-frequency EQ with MusiQ**
- **Variable limiter**
- **ComPACT compressors on mic channels**
- **3 mic/line & 3 stereo inputs**
- **XLR main outputs**

Manufacturer
Allen & Heath
www.allen-heath.com

Price Details
GB£484.00 (exc.VAT)

Clearly new

The **all new Lyra 1 & 2** USB interfaces offer acclaimed **Prism Sound** quality at the most affordable price ever. Based on the highly regarded Orpheus FireWire interface Lyra 1 & 2 offer a **truly professional** audio standard in smaller formats. A choice of 4 inputs and 6 outputs (Lyra 1) or 12 inputs and 16 outputs (Lyra 2) are available with high grade microphone preamps, sample rate conversion and bit rate truncation tools with **world-class** noise shaping options, assignable volume control, comprehensive routing and mixing capabilities and more Lyra 1 & 2 provide a **complete soundcard solution** for recording, mixing and mastering in a small format when your quality **simply cannot be compromised**.

New and Clearly Prism Sound.

See us at NAMM Booth 7123

PrismSound

Lyra

#lyra

sales@prismsound.com | www.prismsound.com | UK +44 (0)1353 648888 | USA +1 973 983 9577

"Although audio plug-in processing is becoming increasingly prevalent, it's clear that great analogue design is still alive and well..."

Nigel Palmer

Bettermaker EQ 232P

Stereo Analogue Passive Equaliser

The Bettermaker EQ 232P dual channel equaliser from Addicted To Music (ATM) is unusual in that it combines modern-style parametric bands with older Pultec-like filters, is an analogue device yet is digitally controlled, and features a plug-in interface enabling either the physical knobs on the box or graphical counterparts on your computer screen to determine settings (which of course brings in the DAW automation dimension as well). There's also a version without front panel controls and a lower price, the EQ 232P Remote, which uses the plug-in only for control. A 500 Series version has also just been released.

Overview

The Bettermaker's 2U black and silver front panel is a little overstated for my taste (custom panels are available) but it's clearly laid out in four sections. From the left, the first has a power button, clip indicators, in/out switches both for individual filters and an overall bypass, an A/B button to toggle between two states, and a high-pass filter. The HPF has a 12dB/octave slope from 18-200Hz, a wide range useful when tracking and mixing. As with most of the Bettermaker's rotary encoders, it is surrounded by LEDs giving a coarse indication of the current setting, a more exact read-out being provided by a numerical display.

The next section contains the parametric bands, EQ1 and 2. As with all the filters, these affect both channels in a linked mode unless unlinked for dual mono. There's also a factory modification available for MS instead of dual mono. The parametrics offer the usual amplitude, frequency, and bandwidth controls; EQ1 operating between 45Hz-1kHz and EQ2 from 650Hz-15kHz.

The third, or P EQ section, is based on the classic Pultec EQ from the 1950s, still a sought-after sound today. The low shelf and high bell both have boost and attenuation available simultaneously. Highs have selectable frequencies (3, 4, 5, 6, 10, 12, and 16kHz) for boost, and 10 and 20kHz for attenuation. There's also an HF bandwidth control. In the lows you get 30, 60, and 100Hz for both. It may seem strange to both boost and cut at the same time, particularly at the same frequency, but in practice this gives the P EQ a wide range of curves that take it beyond a simple 'top and bottom' EQ.

The last front panel section has the display mentioned earlier showing EQ parameters whenever an encoder is moved, together with the channel link controls and a Preset encoder/button that accesses the unit's 399 memories. Coupled with the A/B switch in the first section, this area holds the key to much of the digitally-controlled power of the device, where settings can be remembered, compared, and even undone computer-style. There's also an LED here registering a USB connection between the Bettermaker and a computer for control from the plug-in interface.

THE REVIEWER

Nigel Palmer has been a freelance Sound Engineer and Producer for over 20 years. He run his CD mastering business, Lowland Masters (www.lowlandmasters.com) from rural Essex where he lives with his family and two dogs.

From The Distributor

"Bettermaker is a unique manufacturer the forefront of cutting edge technology in digital control of analogue circuitry. The modern studio is a hybrid of digital efficiency and control, with analogue character. Now these two elements can exist in a single processor. With its EQ232P you get a world class analogue parametric EQ with Pultec circuit that is fully controlled digitally. This is a world first. You can store your EQ settings, A/B different settings, and even control and save your EQ dynamically from a plug-in. This surely is the future of analogue outboard, marrying the two pillars of the modern studio effortlessly with no compromise on quality."

Keith Malin,
KMR Audio

In Use

I added the Bettermaker to my normal mastering rig. Its additional 6dB of headroom compared to the previous 230P may have been gained at the expense of bringing up the noise floor – the review unit was about on par with my noisiest mastering outboard, and about 10dB noisier than my quietest. I wasn't especially concerned as it was still acceptably quiet, and the extended headroom meant there was no danger of clipping.

To start with, I tried the HPF and parametric section and was immediately impressed: all the filters were very smooth, and had a relatively uncoloured but musical vibe that felt like quality. Appetite suitably whetted, it was on to the P EQ section. Both low and high sections had attitude without sounding harsh or at odds with the parametrics – this was clearly a happy marriage of old and new, and I found P EQ HF boost in particular a thing of beauty. Low end control didn't let the side down either: it's not uncommon when material is not mixed with full-range monitoring to have to contend with wayward bass, and the P EQ LF section, sometimes in combination with the lower end of EQ1, performed very well with this.

Conclusion

The Bettermaker shows clever use of the best of both worlds, the control of digital with the sound of analogue, and I wouldn't be surprised if we see more products of this general type coming to market.

I liked the Bettermaker a lot: It's the sound that sells. For me the unit sits comfortably alongside other similarly-priced analogue EQs, and whether you'd choose this one or not would purely be down to personal taste.

Information

Feature Set

- Analogue signal paths
- Full digital recall with 999 presets
- 10 filters (5 per channel)
- AU, VST, RTAS (32- and 64-bit) plug-in control
- A/B compare function

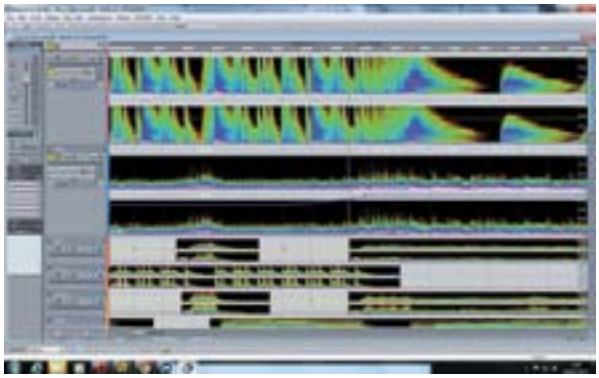
Manufacturer
Bettermaker
www.bettermaker.eu

Distributors
UK: KMR Audio
www.kmraudio.com

Price Details
GB£2,500.00 (exc.VAT)
Remote Version: GB£2,000.00 (exc.VAT)
500-Series Module Version: GB£950.00 (exc. VAT)

"I love Sequoia for the foundational stuff it does right in areas like editing. A proper crossfade editor, source and destination editing, coupled with three and four point edits, play over range previews for range edits."

Alistair McGhee



MAGIX Sequoia 12

DAW

Sequoia is a heavyweight DAW. While many DAWs started as sequencers and gradually added audio, Sequoia made the journey the other way. Starting in the audio world and gradually adding more and more and more MIDI/music making features, until now in Version 12 you get a full version of Independence by Yellowtools (now owned by Magix). Though that isn't the biggest news in version 12, which is that Sequoia is now 64-bit. If you want to play around with an orchestra of virtual instruments then the way forward is a 64-bit OS and a 64-bit version of your favourite DAW. Not forgetting, of course, 64-bit versions of your favourite plug-ins. Magix isn't exactly leading the way here, as Logic and Nuendo and Sonar and Reaper have already made the jump to 64-bit.

Magix is also keen to fly the flag for its bidirectional bridging of your 32/64-bit plug-ins. Working in 64-bit you can bridge in your 32-bit plug-ins and even vice-versa. If you enjoy schadenfreude, just type 'PT11, TDM, RTAS and AAX' into Google – heck you can even sign the petition. I tested the bridge with some iZotope 32-bit plug-ins and gave the bridge a whirl. It worked fine. Of course, there are a million plug-ins, so other outcomes might be available.

Having done with bits, then there's loudness. Sequoia has comprehensive loudness metering to EBU R128 standard, and I think if you fiddle with it you can meter to ATSC A/85 for our US users. Magix has also included an oversampled peak meter to catch those naughty peaks that happen between samples. And using the integrating loudness meter is jolly interesting. Also, inside the file manager, you can ask Sequoia to calculate the loudness of files offline, and (assuming it is a BWAV) Sequoia can then write the loudness information into the meta data chunk of the file. In radio and TV that's info to die for. No more excuses.

If you've been following the Sequoia upgrade path then the interface has changed little, but turn over a few stones in version 12 and there's some interesting stuff going on. Spectral editing has been beefed up with better control in multi-track mixes. And if you are a control freak then you'll enjoy the macro functionality – I think this has been a long time coming.

One of my favourite new features is VCA groups. Each channel can be assigned to a VCA group, and then when the VCA master fader for that group is adjusted, all the faders in that group will exhibit a most fetching 'ghost' appearance, indicating they are being faded up or down as part of a VCA operation. Easy to use, very quick to select, and totally handy.

The new Timecode Track feature is very nice, allowing a track to be dedicated to time code. Using the signal generator you can then create a time code file of any duration and start time with a range of options including drop and non drop frame rates. This 'object' then sits in the timecode track and can be displayed in the time window rather than your standard location time. As it's an object, you can save and recall it whenever you like.

Talking of tracks, you can now nominate one of your tracks to display a tempo automation curve allowing you to graphically edit the tempo of your project. This is in addition to the standard time stretching functions available for objects including Elastic audio automation.

And this is the problem with reviewing such a mature piece of software, by the time you have enumerated all the new functionality there's not much room left for the basic stuff that might interest someone on another platform. I love Sequoia for the foundational stuff it does right in areas like editing. A proper crossfade editor, source and destination editing, coupled with three and four point edits, play over range previews for range edits. And then there's the power of the engine, playback while recording for instance is not something you find on every DAW. The revolving tracks are genius, and I really like the simplicity of the new essentialFX suite.

If you are seeking the pure Zen experience of one bell ringing, look away – Sequoia 12 isn't for you. On the other hand if you're the sort of person who when presented with a lifetimes supply of bells asks, "And where are the whistles?" then check out Sequoia 12 – King of Bells and Whistles.

From The Distributor:

"Sequoia is aimed at editors, broadcasters, and recording musicians. For editors it has multi-track four-point editing and, of course, multi-track cut/paste/crossfade, multi object editing allowing multiple objects to receive the same EQ/FX, etc, and its crossfade editor used to be a stand-alone application(!). Broadcasters can edit a file as it's being recorded; as soon as the event's over it can be broadcast or transferred. Database compatibility allows broadcasters to log plays and sources of material within edited programmes. The recording features are comprehensive (including DDP), the included plug-ins are totally professional. It has everything pretty much, except a coffee maker!"

Douglas Doherty, MD, DACS Audio

Information

Feature Set
- Windows 7/Vista/XP
- 64-bit support, AAF/OMF support
- Loudness metering, True Peak metering
- Syncs with local external timecode

Manufacturer
MAGIX – www.sequoia-audio.com

UK Distributor
DACS Audio – www.dacs-audio.com

Price Details
GB£2,068.75 (exc.VAT)

THE REVIEWER
ALISTAIR McGHEE began audio life in Hi-Fi before joining the BBC as an audio engineer. After ten years in radio and TV, he moved to production. When BBC Choice started, he pioneered personal digital production in television. Most recently, Alistair was Assistant Editor, BBC Radio Wales and has been helping the UN with broadcast operations in Juba.

"For radio journalists I can see it being very handy: get the interviewee to give you something 'for level' and the LS14 will do the maths."

Jerry Ibbotson

Olympus LS14

Linear PCM Recorder

The new Olympus LS14 is the latest in a range of recorders the company has released in recent years. It's an evolution of models like the LS11 and 5, both of which I've used, and has very similar dimensions.

The LS14 feels nice in your hand. The sides are made from matt-finished plastic that isn't strictly rubberised, but does seem grippy and soft helping to reduce handling noise (often an issue with small recorders).

On the right hand side is the hatch cover, the SD card slot (the machine has 4GB of built-in storage, but this offers the chance to expand), and minijack sockets for plug-in mics and line-in. On the opposite side is the headphone socket, remote control input (remote available seperarely), USB connection, and sliding on/off switch.

Power requires two AA batteries, and the first two are provided). It is also supplied with a zip-up bag and a neat clip-mount that screws into the thread in the underside of the Olympus. This lets you attach the LS14 to a solid object and doubles as a table stand. It's ingenious.

The buttons on the front handle transport, and there's a four-way rocker dial to alter playback volume (headphones, or small speaker at the rear) and record gain when in manual mode. A Menu button and three 'F' keys give you key function shortcuts, such as file information.

Hit the Menu button and you see four icons for Rec, Play, LCD Sound, and Settings. To navigate to each you use the rocker dial. It's a clearly laid-out menu system with access to all of the machine's functions. I set up to record in 48kHz stereo wav in a matter of a few seconds, without once looking at the instruction manual. The Olympus works with both MP3s and .wav (BWF Broadcast Wav Format) files. MP3s range from 64kbps (mono) to 320kbps (stereo), while .wavs go from 44.1kHz 16-bit to 96kHz 24-bit. There is a mono mode at 44k, but the rest are in stereo. There's also a choice of mic sensitivity settings and limiter, low cut filter, a two second recording buffer, and a lot more besides.

There are two features that set the LS14 aside from machines like the LS5 and LS11 though. The first sits between the microphone capsules at the top of the recorder: a third mic capsule. This is to compensate for any lack of low-end bass that you might find with relatively small capsules. I'm normally cynical about such innovations, but in the past I have felt that my LS5 lacks a bit of bass. It's nothing I've not been able to live with, given how small and convenient it is to use, but the sound does seem a touch 'light'. The new 'Tresmic' system, as Olympus calls it, is designed to counteract this and add a bit to beef to recordings. You can switch off the third mic though, if you want to. Overall, the LS14 can handle an SPL of 130dB, which is pretty handy!

The other feature that stands out as new sits on the very front of the recorder: it's a mode dial, similar to the kind of thing you'd find on a camera (no coincidence, given Olympus's background). There are four dial positions: a Tuning mode, Smart, Manual, and Quick. I don't see myself ever using the Chromatic Tuner but others may find it useful. Manual mode lets you set the record level yourself, whereas Quick mode uses an auto gain control – great to press and forget.

Smart mode is where it gets really clever. Switch to this and hit the 'Record' button once. The machine goes into Record Standby, and you see it counting down from 30 seconds on the LCD. It's now checking the volume level of your source and working out the record level you need. When it gets to zero, or you override and hit 'Record' again, it starts rolling at that level. But it's not using the auto gain so there will be no 'hunting'; it's fixed itself at one gain setting. You can override and adjust this if you want, but it does at least give you a starting point. For radio journalists I can see it being very handy: get the interviewee to give you something 'for level' and the LS14 will do the maths. I'm not sure what the target level for the recording is, but at a guess I'd say it's around -6dB. You can even adjust the 'Smart Time' – the number of seconds it spends setting the level.

Recorded audio is crisp and clean and, without any scientific testing, I'd say the third microphone capsule does make a difference to the bottom end.

The LS14 has a long list of strong features, its build quality is first class, and it's simple to use. Olympus has done it again.

From The Manufacturer:

"The new LS-12 and LS-14 offer affordable recorders with high quality sound capture, 130dB SPL, plus new on-board directional stereo microphones and amplifier. The new recorders promote ease of use as users can set optimal recording levels on a 'Mode Select Dial' located on the face of the recorder rather than having to go through menu settings. There are also functions specifically for musicians, including overdub recording, Metronome and Chromatic Tuner capabilities."

Georgina Pavelin, Olympus UK

Information

Feature Set
- **'Tresmic' third-capsule system**
- **Simple set-up / menu controls**
- **Up to 130dB SPL handling**
- **Built-in chromatic tuner**
- **Record Standby / level check mode**

Manufacturer
Olympus UK
www.olympus.co.uk/audio

Price Details
GB£189.99 (inc.VAT)

THE REVIEWER
JERRY IBBOTSON has worked in professional audio for more than twenty years, first as a BBC radio journalist and then as a sound designer in the games industry, working on more than 30 titles. He's now a freelance audio producer and writer.

"As I figured it would, the XTi 6002 provided amazingly smooth power to the test subs; my previous experience with Crown amps has consistently shown them to be superb subwoofer amps."

Will James

Crown Audio **XTi 2 Series**

Power Amplifiers

The XTi 2 Series contains four 2U models – the 1002, 2002, 4002, and 6002; Crown supplied the flagship 6002 model, which boasts ratings as follows: 1,200 W, 2,100 W, 3,000 W RMS at 8, 4, and 2Ω stereo and 4,200 W and 6,000 W RMS at 8 and 4Ω bridged mono, respectively.

Most notably, all this power is contained in a 24lb package. The XTi 6002's clean front panel contains three menu buttons: menu display, channel 1 and channel 2 rotary-detented input attenuators, and an on/off switch. The rear panel is equally as straightforward, containing channel 1 and channel 2 XLR input and thru-put connections, four-wire Neutrik Speakon output connectors that correspond to conventional binding posts, a hefty cooling fan, and a USB connector that allows for outboard control of the amplifier with proprietary network of multiple XTi 2 amplifiers.

Internally, there is a nice complement of digital signal processing, controlled via the front panel menu. Its Peakx Plus Limiters allow full control of threshold, attack and release parameters, while the Enhanced Subharmonic Synth allows frequency, gain, and filter-type selection for detailed tuning. The units also come with Harman's updated HiQnet System Architect control software.

The basic on-board options include input mode-stereo, Y from channel 1 input, or summed (both channels 1 and 2). Other options include stereo/bridged outputs, two multi-band EQs per channel with one set on the input and the other set on the output, a variety of crossovers, delay to time align up to 50mS, and adjustable peak limiters.

In Use

For the initial power-up, the amplifier is a basic stereo power amp, with no menu engaged. After you assign settings on the menu, those settings will remain engaged on each subsequent start-up. This is especially helpful when installing multiple XTi 2s in tour system racks and using the amplifiers in the same application for each show.

The XTi 6002 is flexible enough to be used for a variety of applications. At Atlantis Audio, we put it through its paces as a subwoofer amp, a bi-amped monitor amplifier for the low half, and drum-sub power amp.

As a standalone amplifier for subs, we first used the XTi 6002 for a Charlie Daniels Band event; it was a full production for us, with roof, stage, audio, and lighting. It was also a hot Arizona day, in the 105°F range. We opted to bring a few of our unpowered Yorkville TX9 subs to be the test speakers for the amp. We drove two separate subs with channels 1 and 2, with the amps seeing a 4Ω load per side and identical signal to both channels. The subs were crossed at 100 Hz, 24dB per octave, employing the internal filter in the amp, and arranged to be the centre sub boxes in a cardioid sub array in front of the stage.

As I figured it would, the XTi 6002 provided amazingly smooth power to the test subs; my previous experience with Crown amps has consistently shown them to be superb subwoofer amps. The two standalone test subs were difficult to discern amongst an array of 18 subs during the show, but in tests prior to the show the day before, the Crown powered subs were quite impressive.

Back at the shop, we conducted an additional stage monitor test on the XTi 6002, using channel 1 for LF and channel 2 for HF. I dialled channel 2 back considerably, as this particular amp can deliver an unbelievable amount of power to a 16Ω driver. If purchasing purely as a monitor amp, I would likely go with the XTi 2002 or 4002 instead, as the output power is considerably less. Either way, the XTi 2 Series really is superb in monitoring applications, with very nice lows and smooth highs.

Summary

All in all, I would rate this amp very highly. We tortured the amp extensively in the Arizona summer heat, and it never flinched. It held up very well to trucking, rolling up and down ramps, and hefty volume workouts. I know this was only a couple of gigs for the amp, but knowing Crown gear as well as I do, these XTi 2 amps will surely hold up for decades of service. And these days, we need equipment to last a long time.

I give Crown XTi 2 Series amplifiers my highest recommendation for any professional concert or touring application.

Information

Feature Set
- **Peakx Plus™ Limiters**
- **Enhanced Subharmonic Synth section**
- **3 user-defined fan mode controls**
- **50 pre-sets, 49 definable**

Manufacturer
Crown Audio – www.crownaudio.com

UK Distributor
Sound Technology – www.soundtech.co.uk

Price Details
GB£640-£2,270.00 (exc.VAT)

THE REVIEWER
WILL JAMES is owner and chief owner of Atlantis Audio and Lighting, is a longstanding PAR contributor. www.atlantisaudio.com

Media Asset Management

Video Guide looks at media asset management, the crucial data tool that keeps track of material during acquisition, production, post-production, and archiving.

Media asset management is central to technological discussions in broadcasting today. New digital broadcast operations have made MAM a key issue, but there have always been assets in television. Managing 16mm film and the many videotape formats used since the 1950s – one-inch, two-inch, Beta SP, DigiBeta, D1, D2, D3, HDCAM – has been as pressing an issue as it is with file-based formats today, but with a greater volume of material to store and catalogue in an non-physical domain, MAM is now a major consideration.

Digital technology has made assets – raw video and audio footage, interviews, promos, commercials, and complete programmes – easier to move around and store but, in some respects, it makes keeping track of them more difficult. In the digital realm a file can sit among thousands of others of the same format. Unless it is clearly labelled, it can get lost among all the different files held on big storage servers now in use at broadcast centres.

The move to tapeless, file-based broadcast production and post-production means MAM has to be part of all new installations, while existing complexes have to be upgraded to accommodate it. This is necessary for both tracking newly produced or acquired content and giving ease of access to the archive, so older material can be re-used for new programmes or licensed for re-broadcast and DVD/Blu-ray release.

While all material will be somewhere in a storage system, if no one knows exactly where it is then it effectively doesn't exist. This makes the first rule of MAM to put something somewhere and make it able to be found. With more productions working with digital cameras, footage has to be logged right from the start so it can be identified as it moves from the production company to the post-production house and then on to the broadcaster or play-out facility, before finally being deposited in the archive.

Among the main issues involved in instituting a MAM system are: workflows and business processes, data formats and transfers, and business requirements such as accounting and auditing. Broadcasters and facilities have had to review and then update traditional workflows, focusing on the media itself and the consumers receiving it as the main consideration, instead of the equipment and distribution platform. This sounds obvious but achieving such a balance is difficult due to the number of formats and places where these have to be. Getting data to the right location in the correct format is a formidable task, both logistically and financially. Without being properly integrated within an organisation a MAM system can be considered merely a technical piece of equipment. Today it has to also work with finance, legal, accounting, and executive management systems to create an effective whole.

"At the operational level MAM is now becoming crucial as more broadcast and facilities companies install and rely on big digital storage systems and servers."

VPMS Control Centre Upload.

At the operational level MAM is now becoming crucial as more broadcast and facilities companies install and rely on big digital storage systems and servers. But without an effective and fully integrated MAM these huge storage systems with terabytes of capacity are merely vaults. The MAM acts as an index, making media more accessible and streamlining the process of moving material in and out of the storage area.

To ensure the MAM carries out these functions efficiently there are three main points to consider: ergonomics, so it is easier, faster and more reliable to operate than older manual forms of delivery; expandability, so additional play-out channels, new transmission and content-packaging standards, and a growing archive can be accommodated; and cost-efficiency.

MAM is essentially an IT project working with core broadcast technology. This means broadcast engineers have had to come to terms with computer-orientated functionality and interface protocols. Key among these is metadata, which is the basis of the asset management process.

In simple terms metadata is data about data. This can range from the title and duration of a programme to giving full details of what a file contains, who produced/worked on the material, dates and times, copyright information, and technical specifications.

There is no single standard for metadata, although the open file format MXF (Material eXchange Format), developed by a number of manufacturers and industry bodies, has been widely adopted as an effective method of concentrating on working with the material and not spending too much time looking for it.

Some MAM manufacturers, such as Nativ, allow customers to design their own metadata, hierarchies and structures for time and data and other parameters. Nativ's core product is Mio, which comes in two forms: MioEverywhere, a licensed service offering remote ingest of video and audio, data asset management, automation

GLOSSARY

Media asset management (MAM) is a sub-group of digital asset management (DAM), which deals with the organisation and decision making processes involved in ingesting, annotating, cataloguing, storing, tracking, retrieving, and distributing digital material. DAM covers general computer software and hardware systems handling data files. MAM deals specifically with assets such as digital video, audio, graphics, animation, and photograph files. Metadata (data about the data) is used to 'label' and then track files as they pass through the broadcast and post-production chain.

Media management developer Nativ has issued a White Paper claiming that manual workflows are holding back the creative production industry, including broadcasting and post-production. The company urges 'content owners' to adopt new technology and move away from older, traditional methods of operation.

The independent report *Between Creation and Consumption: The Muddle in the Middle* outlines the shortcomings and challenges of current workflows, while outlining a plan to help the market overcome the problems.

The report highlights five key business process challenges faced by all content owners: centralising all assets, in-house and externally managed content in one central place and in the right format; managing video and audio assets, tagging, linking, storing, versioning and structuring every asset so it can quickly and easily be found, prepared, previewed, and manipulated; automating workflows, creating streamlined workflows that match real world processes, with as few manual tasks as possible; repurposing and distributing for every service, automatically generating the best format for each channel and delivering it on time at the highest possible quality; and measuring the impact, working out which video is the most successful and which channels and platforms work the best.

Commenting on the report Nativ Chief Executive Jon Folland says, "Many content owners, distributors, and marketers are unable to make the most of what should be a golden age. The tools and systems currently being used to manage and distribute content belong to the past. Fortunately, it doesn't have to be like this. If, that is, the industry recognises that its traditional ways of managing and distributing film and TV content are no longer sustainable in today's multi-platform world. What's required now is a real platform that can be used in creative and trusted ways to build a secure and cost-effective ecosystem for the content creators and distributors alike.

The full report sis can be downloaded at www.nativ.tv.

PRODUCT FOCUS

TMD Ltd
Mediaflex CI

Media asset management module

Pricing: dependent on core system configuration

Web: www.tmd.tv

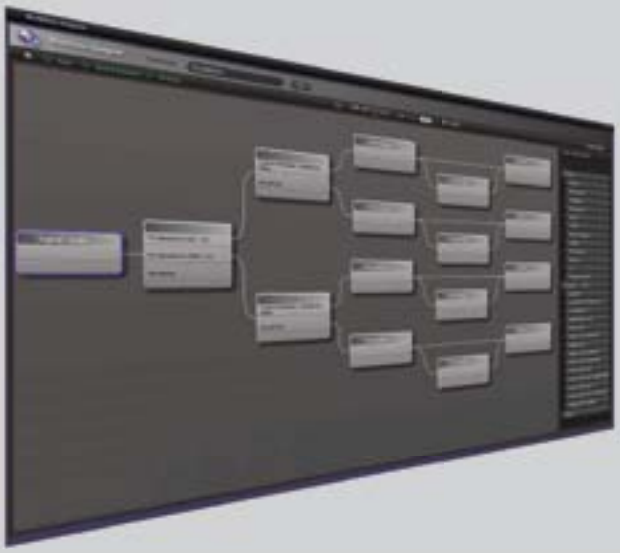
TMD is among the leading developers of asset management systems used in broadcasting and post-production. Its core product is the Mediaflex platform, which comprises a series of modules that can be built up into a MAM system to address specific user needs.

The latest addition to this range is the Mediaflex CI (content intelligence) module, which offers process automation and business analytics in conjunction with workflow development tools. This type of system was previously only used in big enterprise organisations, but is now available to any size of company to 'understand and monetise' underlying content flows and efficiently manage the whole media cycle.

By integrating different module the aim is to design workflows that are defined by business requirements and which can automate all processes as much as is possible. To do this, automated decision making capability – based on business rules developed by each user – is built in to eliminate the need for time-consuming manual decision-making. This is based on collating metadata and search management directed by the content files, a process that is able to launch other functions based on the outcome of the decision making procedure.

Mediaflex CI is based on the Mediaflex workflow engine and incorporates an enhanced graphical user interface for dragging and dropping items into the program. "This is a remarkable addition to the Mediaflex platform and transforms it from a leading asset management platform to a complete enterprise business system," says Tony Taylor, Chairman and Chief Executive of TMD.

"We know from our discussions with broadcasters, production companies, and archives that they have to match content workflows with commercial decision-making to deliver economies as well as making the media available as widely as possible and that is precisely what we have achieved with Mediaflex CI. It is also designed with the future in mind, for instance being inherently cloud ready so that the same business processes can be designed, wherever the content is and whoever is accessing the system."



Harris' new Invenio MAM System.

of the production chain, repurposing applications to tailor original broadcast material for web channels, mobile devices, consoles, and VoD (video on demand); and the more cost-effective Mio On Demand.

Arvato Systems formerly known as S4M (Solutions for Media) produces the VPMS MAM tools packages, while Tedial offers Tarsys, which is often installed in conjunction with the AST hierarchical storage management (HSM) and Ficus business process manager (BPM) systems. IBIS produces the iFind and iLogger systems, Masstech is developer of the Indigo system for both small and large broadcast installations and the Topaz archiving program, while the newly sold on Harris Broadcast Communications produces the Invenio MAM system.

win!

Each month, sE Electronics and *Audio Media* are giving away an sE 4400a microphone to one lucky subscriber. All you need is a subscription to *Audio Media* magazine (digital or print) – if you don't have one, complete this form or subscribe online at www.audiomedia.com. All new subscriptions will automatically be entered into that month's prize draw, and the winner drawn at random from our complete subscriber list, contacted by e-mail and announced in the following month's magazine.

"I've found the 4400a to be a hugely versatile mic – it's great for acoustic instruments, and I especially like it on drums and percussion. Its hyper-cardioid pattern is extremely useful on toms and snare as it control cymbal spillage really well and delivers great punch and tone"

Gil Norton: Foo Fighters, Pixies, Gomez, Feeder, Counting Crows, Maximo Park

- 4 polar patterns
- 10 and 20dB pad
- 60/120 bass cut
- Multi-function shock mount (patent pending)

T&Cs
1. Only one entry allowed per subscription/subscriber.
2. Entry to the draw is only through subscription.

www.seelectronics.com

sE Sound Engineering

Subscription Form

To qualify for your free subscription you must complete all the questions below:

1 JOB FUNCTION *(please circle)*

A Managing Director/owner/ corporate Management
B Studio/facility Manager
C Producer/director
D Chief Engineer
E Independent/freelance Engineer
F Engineer/technician
G Sound Design/editor/mixer
H Operations/production Manager
I Consultant
J Sales/marketing/admin
K Artist/musician
L Studio Designer
M Trainee Audio/Video Professional
N Other

2 TYPE OF BUSINESS *(please circle)*

A Commercial Recording Studio
B Project/private Studio
C Audio/video/film Post Production
D Audio/video/film Production
E Broadcast Production
F Tv Station
G Radio Station
H Live Sound Production
I Contractor/installation
J Venue/auditorium
K Remote Truck/location Recording
L Mastering/replication/duplication
M Rental/hire
N Acoustics/facility Design
O Multi-media/internet Web Creation
P Record Production Company
Q Corporate/government/telecomm
R Dealer/distributor/retailer
S Manufacturer
T Education/training Facility
U Media/industry Association
V Other
X Games Audio

3 FIELD OF WORK *(please circle)*

A Audio Only
B Visual Only
C Audio and Visual

4 PURCHASING AUTHORITY *(please circle)*

A Authorise
B Specify/recommend
C End user only/none

5 PURCHASE INTENTIONS 2011–12 *(circle all that apply)*

A Microphones
B Processors/Plug-ins
C DAW technology
D Recorders
E Monitors/ Headphones/ Amps
F Live Sound Reinforcement
G Pro Video Technology
H Consoles

NAME .....
JOB TITLE .....
COMPANY .....
ADDRESS .....
TOWN / CITY .....
COUNTY / STATE .....
COUNTRY .....
POST CODE / ZIP .....
TEL .....FAX .....
E-MAIL .....@.....

IMPORTANT:
Sign here if you wish to receive AUDIO MEDIA

Signed..... Date.....

This application is not valid unless every section is completed and it is signed and dated. If you do not qualify to receive AUDIO MEDIA without charge, it is available by subscription at:
£43 UK, £60 Europe, £65 Rest of World.

Once you have completed this form please return to IMAS Publishing (UK) Ltd. You may fax back to us on:
+44 (0)1354 669965, mail it to us at Audio Media, Imas Publishing (UK) Ltd, Subscription Dept., Suite L16, South Fens Business Centre, Fenton Way, Chatteris, Cambs, PE16 6TT United Kingdom, or visit www.audiomedia.com/subscribe.html and fill out a subscription form for Audio Media.
Incomplete forms will not be processed. This information is used for IMAS subscription purposes only.
The Publisher offers free subscriptions on a limited basis to those who meet publisher's definition of qualifications and reserves the right to not serve or discontinue free subscriptions at any time.

SERVICES

GK Acoustics
"Quality Professional Acoustics Panels and Traps at Affordable Prices"
The new GIK Scopus (Tuned) Trap takes low end control to a new level in three options that cover 30hz to 135hz with maximum targeted absorption incorporating a pressure-based membrane design and an air tight chamber.
Specially designed for controlling lower frequencies within rooms.
www.gikacoustics.co.uk
+44 (0) 20 7558 8976

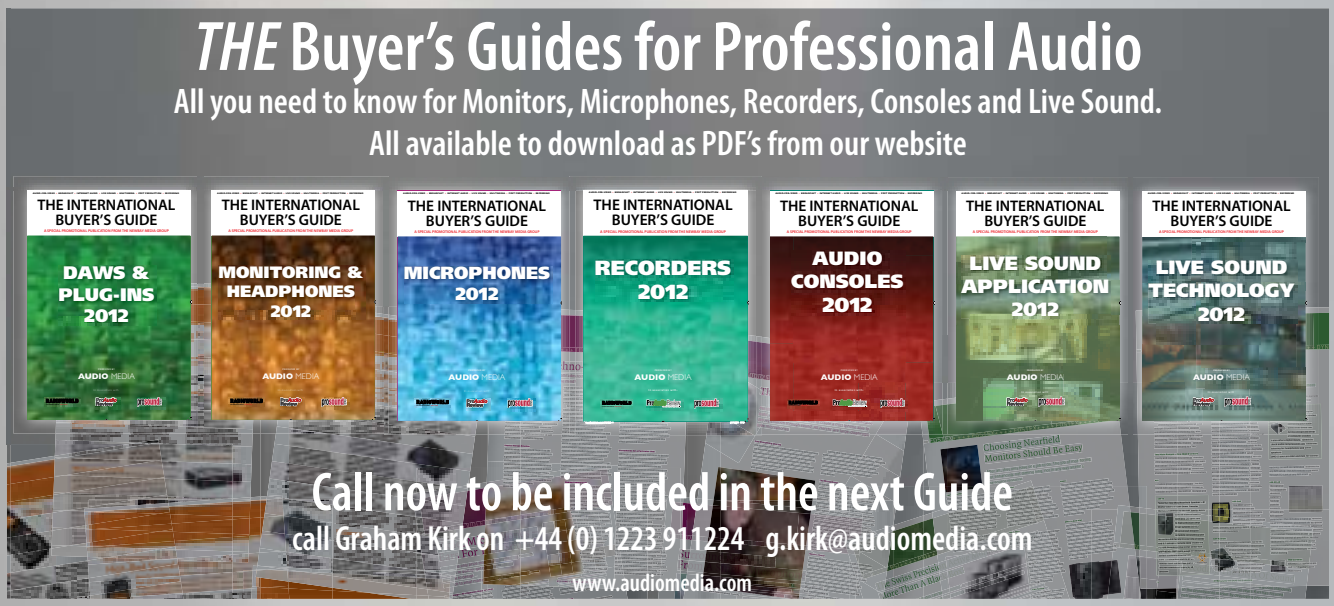
aes
PRO AUDIO
THE VINTAGE NEVE SPECIALIST
WANTED
OLD NEVE & SSL CONSOLES
(ANY CONDITION CONSIDERED)
AES PRO AUDIO IS A UNITED KINGDOM COMPANY WHO PURCHASE WORLDWIDE
TEL: 01932 872672 FAX: 01932 874364 TEL INT: 44 1932 872672 FAX INT: 44 1932 874364
email: aesaudio@intonet.co.uk www.aesproaudio.com

STUDIO ACOUSTICS

The Studio People
01743-885244
07977-043763
www.studiopeople.com
from designing a small v/o booth to building your multi-room studio complex ...we do it all!
CALL US NOW FOR A FREE QUOTATION AND ADVICE

SERVICES

Gasoline Media
Public relations consultancy
Your own PR is always the hardest. Gasoline provides a targeted service for the entertainment technology industry, so let us do it for you.
www.gasolinemedia.com


THE Buyer's Guides for Professional Audio
All you need to know for Monitors, Microphones, Recorders, Consoles and Live Sound.
All available to download as PDF's from our website
THE INTERNATIONAL BUYER'S GUIDE
DAWS & PLUG-INS 2012
MONITORING & HEADPHONES 2012
MICROPHONES 2012
RECORDERS 2012
AUDIO CONSOLES 2012
LIVE SOUND APPLICATION 2012
LIVE SOUND TECHNOLOGY 2012
Call now to be included in the next Guide
call Graham Kirk on +44 (0) 1223 911224 g.kirk@audiomedia.com
www.audiomedia.com

Back To The Future

KEVIN HILTON

Some films do not age well and only a few years later appear dated. Others are still as fresh as they were even after 27 years. As befits a movie about time travel, *Back to the Future* (1985) is in the second category, partly because most of it is set in the 1950s. While this keeps 80s fashion to a minimum, the audio and visual technologies of the time were used to full effect by director Robert Zemeckis and still stand up today.

"Marty is confronted by sights and, more importantly, sounds unfamiliar to him: the ting-ting of the bell at the gas station calling attendants out to a customer's car and, most significantly, the chiming of the town hall clock, which is silent back in his own time."

Kevin Hilton

The theme of the film is underlined from the beginning with the ticking of many clocks in a ramshackle room. This background is punctuated by the activation of a mechanised dog food can opener and a television news bulletin delivering a story about plutonium being stolen from a nuclear facility.

A door opens and a figure enters. The young man, seen initially only from the waist down, heads immediately to a huge guitar amplifier, which powers up with loud hums and rumbles. Plugging in an under-sized guitar the man blows the amp, flies backwards with the force, and is revealed to be Marty McFly (Michael J Fox). The descending silence is shattered by the fire bell-like ringing of the phone. On the other end of the line is the owner of the house, Dr Emmett "Doc" Brown (Christopher Lloyd).

Marty and Doc's conversation is interrupted by all the clocks chiming. Doc is overjoyed because they are in sync and 25 minutes slow, but this means Marty is late for school. Marty's dash into the town of Hill Valley is set to *The Power of Love* by Huey Lewis and the News. An in-joke has Lewis appear as an uptight teacher in charge of band auditions; speaking through a megaphone he tells Marty and his band mates, "I'm afraid you're just too darn loud."

This is another set-back in Marty's far from perfect life, what with his weedy, ineffectual father George (Crispin Glover), prim but slatternly mother Lorraine (Lea Thompson), and bickering brother and sister.

The positives for Marty are the support of his girlfriend Jennifer and his friendship with Doc Brown. The boffin asks Marty to meet him at the local shopping mall late at night. Waiting there is a transporter truck; the back opens with a science fiction movie exhalation noise and a DeLorean DMC-12 glides down a ramp. The sound effect implies Marty's life is about change, something emphasised by a 'big moment' in Alan Silvestri's orchestral score.

Timely Animal Testing

Doc claims to have built a time machine and wants Marty to record the first test on videotape. Putting his dog Einstein in the front seat, Doc remotely controls the DeLorean to reach 88mph, the right speed to trigger the time circuits. The screeching of the tyres merges into electronic blips as the reaction begins, leading up to a zipping noise that turns into a suction sound as the car is pulled into time.

The DeLorean reappears with a clap of thunder and comes to a halt, making cooling noises. With Einstein unharmed Doc is overjoyed at his success and puts a new plutonium canister in the flux capacitor, ready for his own time journey. The device emits a rhythmic electronic sound pattern, with Silvestri adding an underscore that becomes full-blown action music as the terrorists Doc double-crossed to get the radioactive material arrive to exact revenge.

To save himself Marty jumps into the DeLorean, oblivious to the electronic bleep that signals the time machine is activated. As the car hits 88mph it makes a stuttering ignition sound in the leap back to the Hill Valley of 1955. Wandering bewildered around the town, Marty is confronted by sights and, more importantly, sounds unfamiliar to him: the ting-ting of the bell at the gas station calling attendants out to a customer's car and, most significantly, the chiming of the town hall clock, which is silent back in his own time.

The Butterfly Effect

By interacting with his parents as their younger selves, Marty changes future events and jeopardises the existence of his siblings and himself. He tracks down Doc Brown for help and finds his friend was always wildly peculiar. Wearing a supposed mind-reading contraption that makes twittering noises, Doc initially dismisses Marty's claim to be from the future but, confronted with positive evidence, is soon convinced.

Doc warns Marty that he must repair the temporal damage and ensure his parents get together at the high school dance, as happened originally. Dressed in the radiation suit he wore to assist Doc, Marty visits George during the night, claiming to be Darth Vader – complete with heavy breathing noises – and instructs his hapless father to pursue Lorraine.

At the dance Marty begins to disappear, drifting out of time as dramatic pulsing chords play on the soundtrack. The effect is reversed when George and Lorraine finally kiss, allowing Marty to join Doc, who has worked out how to get him 'back to the future'. With no plutonium Doc is relying on an electrical storm to generate the necessary current. With the wind and thunder causing chaos Marty accelerates the DeLorean to hit the power cable Doc has rigged up to harness the lighting. As this happens the car is sent forward in time – only with a more natural, organic sound compared to what was heard in the 1980s.

Back in 1985 Marty discovers his parents are much cooler than before and life is better for the McFlys. This aspirational twist ties the film more to the 1980s, but not as much as the synth sound on the Huey Lewis track *Back in Time* that plays under the end credits. Now, that *is* dated.

"From its build quality to its feature set and open-ended architecture, the Workhorse is currently unrivalled for supremacy."
~ Recording

"Radial can't seem to leave well enough alone! Oftentimes, they take what might be otherwise mundane and turn it into a must have."
~ Tape Op

"The Workhorse certainly lives up to its name. The feature set is deep, the system is scalable, construction is solid and it sounds great. What's not to like?"
~ Mix

"Every connection and function worked as promised. The Workhorse is truly professional grade and worth the cost."
~ Pro Audio Review

"The Workhorse makes a terrific host for modules - solidly built with useful routing features and extensive connectivity."
~ Resolution

"No other manufacturer currently offers anything like this level of functionality in a 500 series rack."
~ Audio Media

"The Workhorse is one of the most versatile and well equipped racks I've ever tried, and exudes the typical Radial Engineering detail and thoughtfulness..."
~ Sound-on-Sound

"The Workhorse is the perfect choice for bringing analogue processing to a DAW-based studio."
~ MusicTech

Radial 500 Series Racks... More of everything!

Radial power racks deliver more performance, flexibility and headroom, and with smart, easy-to-use features that make mixing and matching modules a snap!

More Performance!

The Workhorse™ - an 8 channel power rack with built-in summing mixer. Lets you combine modules in series or in parallel with more efficiency to deliver creative results that let your mixes stand out. D-subs, XLR and ¼" TRS cross patching included!

More Flexibility!

The Workhorse WR-8™ - designed for those with mixers in place, the WR8 gives you 8 channels to house your 500 series modules and lets you upgrade by adding the Workhorse mixer section later. Backwards compatible to older 500 series formats.

More Power!

The Powerhouse™ - This 10 space power rack delivers 1600 milliamps of current for extra headroom while maximizing your studio space. Built-in feed and stereo link switches make it easy to integrate with your recording system.

More Convenience!

The Powerstrip™ - Single rack space Powerstrip lets you assemble your favorite preamp, EQ and compressor to create the ultimate channel strip. Use it in the studio and take it on the road, ... quality with no boundaries!

More easy!

The Cube™ - This small wonder gives you a more easy and affordabe way to enjoy the fun and excitement of 500 series mixing, combining up to three modules to create all new sounds! Place the Cube on your work surface, carry it around the studio with the built-in handle or build it right into your desktop with the optional mounting flanges.

Radial 500 series racks...
Get ready to start creating!

** Modules shown are not included!*

View the Workhorse Videos at:
www.radialeng.com/re-workhorse.htm

www.radialeng.com

1588 Kebet Way, Port Coquitlam BC V3C 5M5 tel 604-942-1001

Radial engineering

...power tools for power players℠

Authorized Distributors:

Belgium:	Czech Republic:	Denmark:	Finland:	France:	Germany:	Italy:	Netherlands:
FACE-BE	MUSIC DATA	ALFA AUDIO	MSONIC	ARBITER	SHURE DISTRIBUTION	GRISBY MUSIC	TM AUDIO
face-be.eu	musicdata.cz	alfaaudio.dk	msonic.fi	arbiterfrance.com	shuredistribution.de	grisby.it	tmaudio.nl

Norway:	Poland:	Spain:	Sweden:	Switzerland:	Turkey:	U.A.E.:	United Kingdom:
DRAMMEN	LAUDA AUDIO	SEESOUND	ARVA TRADING	MGM AUDIO	AKALIN	MELODY HOUSE	SHURE UK DISTRIBUTION
drammenlyd.no	lauda-audio.pl	seesound.es	arva.se	mgmaudio.ch	akalinmuzik.com.tr	melodyhouse.ae	shuredistribution.co.uk

PRO1
LIVE AUDIO SYSTEM

ONE more reason to get excited

PRO1 expands the ever increasing possibilities within the exciting world of truly creative digital audio.

- 24 mic / line inputs on the surface
- Expandable to 40 input channels
- 27 sample-synchronous phase-coherent busses
- Up to 12 multi-channel FX units
- Up to 28 KLARK TEKNIK DN370 31-band EQs
- 6 POPulation groups
- 8 VCA groups
- Daylight-viewable full colour TFT display screen
- MIDAS Latency compensation system
- iPad remote control
- Light weight, compact aluminium frame

MIDAS

midasconsoles.com

© 2012 MUSIC Group IP Ltd. Technical specifications and appearances are subject to change without notice and accuracy is not guaranteed.
MIDAS and KLARK TEKNIK are part of the MUSIC Group (music-group.com).